

DIAGNOSES

Specierum novarum

in herbario Horti Regii Botanici Edinburgensis cognitarum.

LI-CII.

[Species chinenses.]

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***Adenophora Watsoni*, W. W. Sm. Sp. nov.**

Species inter congeneres foliis late obovatis truncatis conspicua.

Planta 40–60 cm. alta, erecta, robusta, simplex nisi in regione inflorescentiae, in medio bene foliata basi fere nuda, striata, minute villosula, infra glabrescens. Folia alterna, 3–4 cm. longa, 3–3.5 cm. lata, perlate obovata, truncata, in medio marginis superioris brevius acuminata, basi rotundata, margine remotius sinuato-dentata, subcoriacea, supra atroviridia glabra vel subglabra, infra pallidiora sparse minute villosula praesertim in venulis; nervi secundarii supra obscuri paululo impressi, infra distincti paulo elevati; petiolus fere nullus vel ad 2 mm. longus. Paniculae amplae 20–30 cm. longae villosulae; rami ascendentes, basi longiuscule nudi, in parte superiore remotius floriferi; flores saepius solitarii, nonnunquam bini, nutantes; pedicelli 2–4 mm. longi, villosuli, bracteolis brevibus linearibus praediti. Receptaculum circ. 4 mm. longum, dense villosulum; dentes calycini circ. 3 mm. longi, lineares vel anguste lanceolati, acuti, villosuli vel glabrescentes. Corolla 1.7–2 cm. longa, ore circ. 2 cm. lata, infundibuliformis, coerulea; limbi lobi 7–8 mm. longi, triangulares. Stamina e basi dilatata antheris circ. 6 mm. longis filamentum fere aequantibus. Discus circ. 2 mm. longus cylindricus glaber. Stylus vix corollam aequans, pubescens.

Central China:—Grown from seeds collected near Tatsienlu by Mr Charles Marson Watson in 1908. Among the species of *Adenophora* centering round *Adenophora polymorpha*, Ledeb., this new species is distinguished by the peculiar truncate leaves.

***Ainsliaea fulvipes*, J. F. Jeffrey et W. W. Sm.**

Species affinis *A. undulatae*, Diels ex descriptione; ab illa specie et ab *A. Henryi*, Diels acheniis hirsutis inter alia differt.

Planta 20-45 cm. alta, gracilis, rhizomate longo crasso vestigiis praeteritorum foliorum dense vestito, apice setis longis fulvis copiose ornato. Caulis solitarius flexuosus basi foliatus, primo densius fulvo-setosus deinde subglabrescens. Folia omnia vel fere omnia radicalia, petiolis 2-7 cm. longis setis longis fulvis patentibus dense obsitis; lamina 3-6 cm. longa, 1.5-2.5 cm. lata, elliptica, apice rotundata vel obtusa, basi rotundata vel subrotundata, subcoriacea, margine remote indurato-apiculato-denticulata, supra atro-viridis primo longiuscule fulvo-setosa, deinde glabrescens, infra pallidior densius fulvo-setosa, nervis 3-4 utrinque abeuntibus supra obscuris infra paulo prominulis; folia caulina nulla vel 1-2 minuta bracteiformia. Capitula solitaria remota vel 2-3-fasciculata, spicam 7-16 cm. longam interruptam angustissimam formantia, 2-3-flora, vix 1 cm. longa. Involucri phylla exteriora brevia rubrida, interiora elongata lanceolata acuminata subpaleacea. Pappi setae uniseriatae 6 mm. longae fulvae. Achaenium circ. 1 mm. longum dense pilosum.

Yunnan:—Near Teng-yueh, Howell No. 252. *Type*.

Yunnan:—"Plant of 9-18 inches. Flowers pale rose. Dry shady situations on rocks in the hills to the north of Teng-yueh. Lat. 25° 15' N. Alt. 7000 ft. May 1912." G. Forrest. No. 7862.

Allium Beesianum, W. W. Sm. Sp. nov.

Species ex affinitate *Allii cyanei*, Regel et *Allii kansuensis*, Regel; ab hoc floribus majoribus, filamentis ecuspidatis, stylo ovario 2-3-plo longiore differt, ab illo floribus duplo majoribus, segmentis perianthii elliptico-oblongis, staminibus inclusis recedit.

Bulbi caespitosi, angusti, cylindrici, basi rhizomata filiformia horizontalia emittentes, tunicis tandem fibrosis praediti. Caulis erectus 30-45 cm. altus, teres, a basi usque ad medium foliatus. Folia 1-3, canaliculata, deinde plana, 10-25 cm. longa, 4-8 mm. lata, linearia, subobtusa, margine minutissime scabra. Scapus gracilis apice nutans. Spatha membranacea univalvis ovata apiculata mox decidua. Umbella 5-10-flora, hemisphaerica, pedicellis subaequalibus, quam flores vix brevioribus, basi nudis. Perianthii campanulato-tubulosi clare cyanei segmenta elliptico-oblonga, obtusa, ad 13 mm. longa, ad 4 mm. lata, exteriora interioribus paulo breviora. Stamina exteriora perianthium fere aequantia, interiora circiter $\frac{1}{2}$ breviora; filamenta cyanea, basi dilatata ecuspidata. Ovarium trigonum minute papillosum; stylus cyaneus ovario 2-3-plo longior, perianthium fere superans.

"Plant of 9-18 inches. Flowers pendulous, bright blue, striped a deeper shade. Open stony pasture on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 35' N$. Alt. 12,000 ft. Sept. 1910." G. Forrest. No. 6576. *Type*.

"Open boggy grassland on the Chung Tien plateau six miles south of town. Alt. 12,000 ft. September 1904." G. Forrest. No. 253.

"Plant of 9-14 inches. Flowers deep rich blue, with the segments of perianth pure white. Open mountain meadows on the eastern flank of the Lichiang Range. Lat. $27^{\circ} 20' N$. Alt. 12,000-13,000 ft. September 1906." G. Forrest. No. 3029.

***Arisaema auriculatum* W. W. Sm. Sp. nov.**

Species affinis *A. nepenthoidi* (Wall.) Mart. inflorescentia simillima sed foliis trifoliolatis.

Planta 30-60 cm. alta, basi squamis foliaceis pluribus tenuiter membranaceis purpureo-striatis induta. Folia duo, petiolo 8-12 cm. longo vagina membranacea instructa; lamina trisecta, segmentis lateralibus sessilibus, intermedium subaequantibus vel paulo superantibus, basi valde inaequilateralibus, omnibus longe acuminatis basi cuneatis vel rotundatis, 8-12 cm. longis 3-6 cm. latis, lanceolatis vel ovatis, nervis supra obscuris, infra distinctis eminentibus; segmentum intermedium nunc sessile nunc ad 3 cm. petiolulatum. Pedunculus petiolum plus minusve aequans. Spatha lurido-purpurea, ad apicem viridis, usque ad 13 cm. longa; tubus cylindricus, ad 6 cm. longus, basi 1 cm. superne 2 cm. latus; lamina late ovata, circ. 7 cm. longa, medio 5 cm. lata, basi paulo contracta, apice breviter acuminata, basi utrinque in auriculam amplam circ. 3 cm. longam rotundatam recurvam dilatata. Inflorescentiae masculinae pars antherifera circ. 3 cm. longa; pars superior circ. 4 cm. longa, breviter ad 5 mm. stipitata, exserta, erecta, cylindracea, obtusa, ei *A. nepenthoidis* simillima. Ovaria inflorescentiae femininae arcte conferta.

"Plant of 1-2 ft. Spathe livid maroon, greenish towards tip. Pasture on the margins of pine forests on the eastern flank of the Tali Range. Lat. $25^{\circ} 40' N$. Alt. 8000-10,000 ft. July-August 1910." G. Forrest. No. 7261. ♂. *Type*.

"Plant of 12-15 inches. Spathe livid green veined and netted purplish red. In mixed forests on the eastern flank of the Tali Range. Lat. $25^{\circ} 40' N$. Alt. 8000-10,000 ft. August 1910." G. Forrest. No. 7260. ♂ and ♀.

"Plant of 1-2 ft. Inflorescence deep reddish purple, spathe same, spotted a deeper shade. Damp pine forests on the

eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 9000-10,000 ft. July 1906." G. Forrest. No. 4851.

Very near to the Himalayan species *Arisaema nepenthoides* (Wall.) Mart., but with trifoliolate leaves, and various minor differences in the spathe. No. 4851 was referred in Notes Roy. Bot. Gard. Edinb., vol. vii, p. 276, to *Arisaema nepenthoides* (Wall.) Mart. The leaves of that specimen are scarcely developed.

***Arisaema lichiangense*, W. W. Sm. Sp. nov.**

Species affinis *Arisaemati ringenti*, Schott; proxima *A. talensi*, Engl. MSS. (in Herb. Berol. et Herb. Edinb.) sed foliolis latissimis, spatha majore latiore auriculata purpurea luteo-striata recedit.

Planta 20-30 cm. alta. Tuber subrotundum 3-4.5 cm. diametro, fibris multis praeditum. Folium solitarium, petiolo 20-24 cm. longo, basi squamis foliaceis (plerumque duabus) 6-12 cm. longis, ellipticis, tenuiter membranaceis purpureo-maculatis instructum; lamina trisecta segmentis sessilibus (vel intermedio fere sessili) 4-9 cm. longis, 3-9 cm. latis, latissime ovatis vel suborbicularibus, apice breviter et abrupte acuminatis, basi late cuneatis vel rotundatis, integris, nervis reticulatis subtus paulo distinctioribus; segmentis lateralibus intermedio paulo minoribus, basi nunc aequilateralibus nunc valde inaequilateralibus. Pedunculus petiolum plus minusve aequans. Spatha purpurea, luteo-striata, apice longe acuminata inclusa 7-10 cm. longa, in sicco 1.2-1.8 cm. lata, lamina late ovata, e tubo abrupte ampliata, basi breviter auriculata, intus pulchre luteo- et purpureo-marmorata. Inflorescentiae masculinae pars antherifera circ. 1.5 cm. longa; pars superior circ. 5 cm. longa, caudiformis apice subacuta, deflexa, nigrescens. Flores femini desunt.

"Plant of 9-12 inches. Spathe purple, striped yellow. Dry open situations amongst pine scrub on the eastern flank of the Lichiang Range. Lat. 27° 30' N. Alt. 9000-10,500 ft. June 1910." G. Forrest. No. 5972. *Type*.

"Plant of 9-12 inches. Spathe purple, striped green. Open situations on the margins of pine forests on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 9000-11,000 ft. June 1910." G. Forrest. No. 5797.

The species is closely akin to Forrest No. 4849, *Arisaema talense*, Engl. var. *latisectum*, Engl. (adhuc nomen), but with much broader leaflets and a different spathe. The appendix of the male flower is quite that of *Arisaema talense*, Engl. in Forrest No. 2465.

Buddleia caryopteridifolia, W. W. Sm. Sp. nov.

Inter species chinenses descriptas primo intuitu foliorum forma et aspectu conspicua.

Frutex ramosus 150-180 cm. altus ramulis robustis subteretibus bene foliatis dense incano-stellato-tomentosis, vetustis decorticantibus. Folia opposita petiolo 5-10 mm. longo anguste alato incano-stellato-tomentoso praedita, plerumque 4-6 cm. longa, 3-4 cm. lata, ovata vel oblonga, apice rotundata vel obtusa, basi inaequalia latissime cuneata vel subtruncata vel subrotundata, grosse subirregulariter crenato-dentata, supra subincana, stellato-tomentosa, infra pallidiora dense incano-stellato-tomentosa, nervis supra subobscuris infra conspicuis pulchre reticulatis. Cymulae in paniculam terminalem angustissimam 4-8 cm. longam confertae; pedunculus 2-3 cm. longus vel fere nullus; pedicelli fere nulli; bractae nunc conspicuissimae 2 cm. longae, lineari-lanceolatae incano-tomentosae, nunc multo minores. Calyx tubulosus circ. 3 mm. longus, extus dense incano-stellato-tomentosus, intus glaber dentibus 1 mm. longis subulatis. Corollae lavendulaceae tubus 6-7 mm. longus, circ. 1.5 mm. latus, extus dense incano-tomentosus, intus sparse pilosulus; lobi rotundati circ. 2 mm. diametro, extus incano-tomentosi intus marginem versus glabri, faucibus \pm pilosuli. Stamina in medio tubo inserta. Ovarium albo-tomentosum. Fructus deest.

"Shrub of 5-6 ft. Flowers pale lavender. Open situations on the Tong Shan in the Yangtze bend. Lat. 27° 20' N. Alt. 10,000 ft. Sept. 1913." G. Forrest. No. 11,016.

Buddleia eremophila, W. W. Sm. Sp. nov.

Species ex affinitate *B. nanae*, W. W. Sm., eadem magnitudine habituque sed foliis crenato-serratis subtus incanis primo intuitu discrepat.

Fruticulus ramosus 30-60 cm. altus, ex collectore compactus, ramulis gracillimis teretibus primo dense incano-stellato-tomentosis, senioribus mox glabrescentibus et defoliatis, tandem decorticantibus. Folia opposita petiolo 2-3 mm. longo dense incano-stellato-tomentoso praedita, 1-1.5 cm. longa, 5-8 mm. lata, ovata vel lanceolato-ovata, apice obtusa, basi late cuneata vel subrotundata, distincte crenato-serrata serraturis utrinque 3-4, supra pallido-viridia dense stellato-tomentosa, infra dense incano-stellato-tomentosa, nervis 3-4-paribus supra immersis infra eminentibus. Inflorescentiae pro genere brevissimae, plerumque 3-7-florae; flores parvi, apice ramulorum fere capitati; pedicelli vix 1 mm. longi, incano-tomentosi; bractae 2-3

mm. longae, lineares incano-tomentosae. Calyx tubulosus 4-5 mm. longus, tubo corollae adpressus, extus dense incano-stellato-tomentosus, intus glaber, dentibus linearibus 1 mm. longis. Corollae (lavandulaceae?) tubus circ. 8 mm. longus, 1.5 mm. latus, extus stellato-tomentosus; lobi rotundati circ. 1.5 mm. diametro, intus glabri. Stamina in medio tubo inserta. Ovarium tomentosum; fructus maturus 4-5 mm. longus ovoideus glabrescens brunneus.

"China:—Western Yunnan, arid regions above the Yangtze. Alt. 10,000 ft. Compact dwarf shrub of 1-2 ft. May 1913." F. Kingdon Ward. No. 304.

This species is at once distinguished by its dwarf habit, its very slender branches and few-flowered inflorescence; it is nearest to *Buddleia nana*, W. W. Sm., and of still slenderer form.

***Buddleia incompta*, W. W. Sm. Sp. nov.**

Species affinis *B. heliophilae*, W. W. Sm. sed foliis minoribus obtuse dentatis inter alia recedit; a *B. eremophila* supra descripta foliis majoribus, corolla extus nitenti-glandulosa inter alia signa differt.

Frutex ramosus 90-180 cm. altus, ex collectore incomptus, ramulis robustioribus subteretibus, primo \pm dense incano-stellato-tomentosis, senioribus glabrescentibus. Folia opposita petiolo \pm 1 cm. longo alato dense incano-stellato-tomentoso praedita, 2-3 cm. longa, 1-1.5 cm. lata, ovato-elliptica, apice obtusissima vel subrotundata, basi saepius cuneatim in petiolum angustata rarius subtruncata, saepius dentata denticulis utrinque 8-10, rarius obscure undulato-denticulata, supra subincano-stellato-tomentosa, infra dense incano-stellato-tomentosa, nervis 6-7-paribus supra immersis infra eminentibus. Cymulae in paniculam terminalem angustam 4-6 cm. longam confertae; pedunculi brevissimi, pedicelli fere nulli, bractae 3-8 mm. longae, incano-tomentosae. Calyx tubulosus circ. 4 mm. longus, tubo corollae adpressus, extus dense incano-stellato-tomentosus, intus glaber dentibus 1 mm. longis sublinearibus obtusiusculis. Corollae tubus circ. 8 mm. longus, circ. 1.5 mm. latus, extus sparsius tomentosus, hinc inde glaber, \pm dense glandulis nitentibus conspersus; lobi rotundati circ. 3 mm. diametro, extus nitenti-glandulosi, nonnunquam subglabri, intus glabri. Stamina in medio tubo inserta. Ovarium albo-tomentosum. Fructus deest.

"China:—Western Yunnan in the A-tun-tsi valley at about 11,000 ft., on dry rocks and exposed hillsides. Untidy bush of 3-6 ft.; leaves silver in spring, golden in autumn. June 1913." F. Kingdon Ward. No. 345. *Type*.

"China:—Western Yunnan in Mekong Valley. Untidy shrub of 4-5 ft. June 1913." F. Kingdon Ward. No. 313.

This is, I believe, the same species; the inflorescence is less dense, the flowers 1 cm. long, calyx more tomentose.

Caragana oreophila, W. W. Sm. Sp. nov.

Species valde affinis *C. Franchetianae*, Kom. a qua habitu humiliore, ramis foliisque dense albo-villosis haud glabrescentibus floribus paulo minoribus inter alia satis recedit.

Frutex erectus ramosus 60-120 cm. altus ramis erectis elongatis crassiusculis junioribus densissime molliter albidovillosis senioribus nigrescentibus haud glabrescentibus. Petioli vetusti indurati patentissimi robusti 2.5-3 cm. longi, nudi spinoso-mucronati, apice excepta dense villosuli; stipulae 4-5 mm. longae ovatae scariosae margine albo-ciliatae, mox emarcidae. Folia 3-3.5 cm. longa, plerumque 8-juga jugis \pm approximatis, rhachide dense longiuscule albo-villosa mucrone longo glabro praedita; foliola 6-7 mm. longa, circ. 2 mm. lata, oblonga, mucronulata, utraque facie dense subadpresse albo-villosa. Pedunculi uniflori nunc vix 1.5 mm. longi, nunc pedicellos aequantes, albo-villosi, bractea lineari circ. 5 mm. longa scariosa praediti; pedicelli plerumque 7-8 mm. longi, albo-villosi, bracteolis duabus linearibus 4-5 mm. longis scariosis nunc supra medium affixis nunc prope calycem suppositis. Calyx tubulosus 11-12 mm. longus longiuscule albo-villosus, dentibus lanceolatis acuminatis subspinescentibus tubum \pm aequantibus. Corolla aurantiaca brunneo-suffusa fere 2 cm. longa, vexillo circ. 1.8 cm. longo late obovato longe unguiculato plicato, alarum auricula lineari ungui fere aequali circ. 4.5 mm. longa, carina circ. 1.4 cm. longa apice rotundata basi auricula dentiformi instructa. Ovarium elongatum dense albo-villoso-lanatum; legumen circ. 2.2 cm. longum extus dense lanatum, intus indumento fulvido farctum, seminibus oblongis.

"Spinous shrub of 2-4 ft. Flowers orange and brown. Open alpine pasture on the mountains in the north-east of the Yangtze bend. Lat. 27° 45' N. Alt. 12,000 ft. July 1913." G. Forrest. No. 10,331.

In some specimens the peduncle is so short that at the first examination affinity with the section *Jubatae* is suggested. However, in habit, in the number of leaflets, in the bracteoles and floral structure, it is a close ally of *C. Franchetiana*, Kom., also collected by Forrest in the neighbouring Lichiang Range.

Cassiope palpebrata, W. W. Sm. Sp. nov.

Species ex affinitate *C. selaginoidis*, Hook. f. et Thoms. sed foliis \pm patentibus, vix imbricatis, longiuscule setoso-ciliatis, filamentis villosulis inter alia facile distinguitur.

Fruticulus humilis 6-8 cm. altus, suberectus vel decumbens. Folia 2-4 mm. longa, circ. 1 mm. lata, lanceolata vel subelliptica apice subobtusa basi cuneata rigida, \pm patentia, conferta sed vix imbricata, coriacea, margine incrassata et setis utrinque 3-4 circ. 1 mm. longis praedita, caeterum glabra nitentia. Flores axillares cernui albidi pedicellis gracilibus circ. 2 cm. longis abrupte (fere recto angulo) abeuntibus dense araneoso-fulvido-villosis suffulti. Sepala 5, libera, 2 mm. longa, elliptica vel ovata, apice rotundata vel obtusa, laete rubro-purpurea, glabra. Corolla campanulata 7-8 mm. longa lobis ovatis 2 mm. longis obtusis. Stamina 8 (in specimine dissecto) inclusa filamentis 2 mm. longis subulatis sparsius villosulis, antheris ovoideis apice aristis duabus elongatis ornatis. Stylus 2 mm. longus columnaris. Fructus maturus deest.

"China:—In Western Yunnan on the Mekong-Yangtze divide, on granite scree and precipices at an elevation of 13,000-14,000 ft. June 1913." F. Kingdon Ward. No. 583 in Herb. Edin.

A very graceful species differing from the allied Himalayan species in the foliage.

Chimonanthus yunnanensis, W. W. Sm. Sp. nov.

Species affinis *Chimonantho fragranti*, Lindl.; foliis ovatis basi rotundatis, apice non acuminatis, foliis ad tempus florendi persistentibus recedit.

Frutex 5-10 m. altus. Ramuli angulati pilosuli vel glabrescentes cortice griseo pustulato praediti. Folia tempore florendi persistentia, opposita, 4-7 cm. longa, 3-4.5 cm. lata, ovata vel subelliptica, apice obtusa vel subobtusa, nec acuminata, basi rotundata, petiolo circiter 5 mm. longo sparse pilosulo praedita, coriacea, integra, supra pustuloso-scabridula nervis obscuris, infra glabra nisi in costa nervisque sparsissime pilosulis, nervis 4-5-paribus eminentibus albo-nitentibus instructa. Flores axillares solitarii vix pedunculati, flavicantes; bracteolae pluriseriatae, ovatae vel rotundatae, minute pilosulae et ciliatae, superne gradatim majores ad 5 mm. longae, floris basim arcte obtegentes. Perianthii foliola exteriora rotundata, circiter 7 mm. longa, intermedia 10-12 mm. longa, elliptica obtusa, interiora circiter 5 mm. longa, late ovata vel suborbicularia, ad 1 mm. unguiculata. Stamina antherifera 5. Fructus deest.

"Shrub of 15-30 ft. Flowers dull yellow. Dry sunny situations amongst scrub at south end of the Sungkwei Valley. Lat. 26° 10' N. Alt. 6000-7000 ft. November 1910." G. Forrest. No. 7366.

A species closely allied to the well-known *C. fragrans*, Lindl., from which I have separated it with some hesitation. The new species is distinguished by the ovate leaves with broad base persistent at the time of flowering and by the broader and rounder perianth-segments.

Clematis Forrestii, W. W. Sm. Sp. nov.

Species distinctissima; aspectu haud dissimilis *C. fasciculiflorae*, Franch. sed acheniis sericeis inter alia valde discrepat; foliis ad *C. uncinatam*, Champ. spectat, caeterum diversa; in schemate cl. Finet et Gagnepain* in vicinia *C. Meyenianae*, Walp. ponenda, quae species tamen notis multis facile distinguitur; bracteae conspicuae in poculum connatae gemmam mediam prima aetate cingunt, postea in aperto flore intervallo ± 1 cm. longo a calyce separantur, id quod notae utili est observandum.

Frutex scandens, 6-10 m. altus, caule striatulo cinereo mox decorticante. Folia nodis congesta quasi fasciculata trifoliolata glabra vel infra prope costam pilis rarissimis albidis conspersa; petiolus 2-4 cm. longus glaber, petioli laterales 1-3 mm. longi; intermedius ad 1 cm.; foliola 2-8 cm. longa, 1-3 cm. lata, ovato-lanceolata, acuta apiculata, basi rotundata, integra (lateralia saepe parte exteriori lobatula), tenuiter chartacea, supra viridia venis primariis tribus indistinctis, infra paulo pallidiora venulis bene reticulatis. Inflorescentia similis ei *Clematidis fasciculiflorae*; flores axillares cernui 5-6-fasciculati; pedicelli sub bracteis connatis 2-3 cm. longi glabri vel pilis albidis sparsissime praediti, supra bracteas 1-1.5 cm. longi, densissime albedo- vel flavido-tomentosi; bracteae 5-7 mm. longae in poculum biauratum coalitae extus albedo-villosae. Sepala 4, oblonga, 2 cm. longa, 8-10 mm. lata, obtusa, extus dense tomentosa, intus glabra, flavida, venis circ. 7 indistinctis. Stamina circ. 30, sepala aequantia vel paululo superantia, filamentis loriformi-linearibus glabris roseis, antheris 2.5 mm. longis glabris roseis oculis a latere dehiscentibus. Achaenia ovoidea, 3-4 mm. longa multo compressa, margine crassato flavido, dense sericea, stylo fere ad 4 cm. elongato albedo-plumoso praedita.

Yunnan, West China.

"Scandent shrub of 20-30 ft. Flowers creamy-yellow,

* Bull. Soc. Bot. Fr. L (1903), 522.

filaments and anthers bright magenta-rose on trees and scrub in open situations on the western flank of the Shweli-Salwin divide. Lat. $25^{\circ} 20'$ N. Alt. 7000-8000 ft. Dec. 1912." G. Forrest. No. 9398.

"Same locality. Feb. 1913." G. Forrest. No. 9526.

A species with very characteristic bud and bracts; in the young state before the opening of the flower the bud girt round the middle by the connate bracts bears a strong resemblance to the bud of a *Styrax*.

***Corydalis calcicola*, W. W. Sm. Sp. nov.**

Species persimilis *C. trachycarpae*, Maxim.; floribus minoribus, petalis, ovario differt.

Planta 7-20 cm. alta, radicibus plurimis fusiformibus praedita. Caules complures, debiles, adscendentes, paulo complanati, striatuli, basi longe nudi superne in ramulos 2-4 racemiferos divisi. Folia basalia petiolo ad 10 cm. longo flexili praedita; lamina tripinnato-secta, segmentis ultimis lanceolatis acutis; caulina in superiore caule aggregata, alterna, petiolo circ. 1 cm. longo instructa, ambitu oblonga, 4-6 cm. longa, cetera radicalibus subsimilia. Racemi densi multiflori 4-5 cm. longi. Bractee pedicellos superantes flabellato-pinnatisectae, superiores 3-5-sectae; pedicelli 5-15 mm. longi. Flores pallido-purpurei, apice saturate roseo-purpurei, fragrant. Sepala minuta, membranacea, orbicularia, profunde lacera. Petali exterioris postici lamina circ. 6 mm. longa, 5 mm. lata, utrinque alata, cristata, obtusa, calcare 10-12 mm. longo subrecto vel paulo decurvo obtuso praedita; petali exterioris antici lamina circ. 9 mm. longa, utrinque alata, carinata; petala interiora apice cohaerentia 6-7 mm. longa. Ovarium ellipsoideum, 3 mm. longum; stylus 4 mm. longus, stigmatibus 5-lobo.

"Plant of 3-9 inches. Flowers pale purple with tips deep rose-purple, fragrant. On limestone drift on the western flank of the Lichiang Range. Lat. $27^{\circ} 30'$ N. Alt. 13,000 ft. August 1910." G. Forrest. No. 6372.

***Cremanthodium comptum*, W. W. Sm. Sp. nov.**

Species nana foliis late ovatis subtus dense incano-tomentosis, involucri phyllis densissime crispato-nigro-villosis inter congeneres satis conspicua.

Planta 5-7 cm. alta rhizomate longiusculo praedita. Caulis gracilis infra glaber atroruber supra sub inflorescentia crispato-nigro-villosus. Folia 3-4; infimum squamiforme usque ad 2 cm. longum, lamina deficiente vel minima; mediana plerumque duo, 1.5-2 cm. longa, 1-1.5 cm. lata, late ovata, apice obtusius-

cula, basi late cuneata vel subrotundata, pro magnitudine grosse serrato-dentata, subcoriacea supra viridia glabra subtus dense incano-araneoso-tomentosa; petiolus 3-5 mm. longus, basi vaginulatus ruber glaber vel subglaber; folium supremum saepius multo reductum fere bracteiforme. Capitulum circ. 2 cm. longum et latum; involucri phylla 12-15, extus densissime crispato-nigro-villosa capillis albidis paucis intermixtis intus glabra nitenti-viridia, ad mediam partem connata; partes superiores lineares 1 cm. longae, 1-2 mm. latae. Flores ligulati circ. 10, circ. 1.5 cm. longi ligulis anguste oblanceolatis apice argute 2-3-denticulatis; pappus albus 6-7 mm. longus; flores disci 20-30.

"China:—Near A-tun-tsi, Western Yunnan, on earth screes at an elevation of 15,000 ft. August 1913." F. Kingdon Ward. No. 975.

***Daphne calcicola*, W. W. Sm. Sp. nov.**

Species ex affinitate *D. aurantiacae*, Diels; fortasse varietas nana illius speciei aestimari debet sed habitu prostrato, foliis linearibus, floribus minoribus valde recedit.

Fruticulus humilis ramosissimus 30-60 cm. altus, pro maxima parte humifusus; rami crassi nodosi, juniores vestigiis foliorum praeteritorum verrucosi. Folia apices ramulorum versus conferta, vix vel ad 1 mm. petiolata, 7-10 mm. longa, 1-2 mm. lata, linearia vel sublinearia, subacuta, basi paulo angustata, margine \pm revoluta, subcoriacea laevia glabra, supra viridia infra pallidiora; costa supra impressa vel obscura, subtus eminens, nervi ceteri ne sub lente quidem visibiles. Flores plerumque bini terminales fere sessiles (pedicellus \pm 1 mm. longus) glabri aurantiaci fragrantissimi; tubus 8-9 mm. longus vix 1.5 mm. latus, lobi ovati vel orbiculari-ovati 2.5-3 mm. diametro. Stamina biseriata antheris 1 mm. longis. Ovarium glabrum 1 mm. longum, stylus 0.5 mm. longus, stigma capitatum. Fructus deest.

"China:—Western Yunnan, on limestone above Chung River, Sha-la-ka, 10,500 ft. A low compact shrub. May 1913." F. Kingdon Ward. No. 328.

Approaching *D. aurantiaca*, Diels, in its fragrant yellow flowers, but differing in the prostrate habit, narrow linear leaves and slender perianth-tube.

***Erysimum bracteatum*, W. W. Sm. Sp. nov.**

Species aliqua ex parte anomala; notis plurimis ad *Erysimum* spectat sed racemis bracteatis recedit.

Planta 60-90 cm. alta, erecta, ramosa, satis foliosa, racemis amplis ramulos terminantibus. Folio plerumque 6-8 cm. longa, 4-5 mm. lata, linearia vel angustissime lineari-lanceolata, acuta, in petiolum vix discretum attenuata, insertione angusta, subintegra vel remote denticulata, pilis bipartitis appressis utrinque incana. Racemi ampli, in fructu ad 25 cm. elongati, saepius bracteati; bracteae inferiores foliis similes et aequilongi, superiores minores nonnunquam deficientes, nunc pedicellis 5-10 mm. longis multo majores, nunc multo minores. Sepala circ. 8 mm. longa, lateralia multo latiora, basi gibbosa, omnia sparse incano-pilosula. Petala 13-14 mm. longa, spathulata, aurea, ungue circ. 8 mm. longo. Siliqua ad 10 cm. elongata, compressa, adpresse incano-pilosula; stylus brevis stigmatē capitato. Semina 2-seriata, oblonga, vix 2 mm. longa, fulvida.

China:—Near A-tun-tsi, Western Yunnan. Grown by Bees Limited and in the Royal Botanic Garden, Edinburgh, from seed collected under No. 67 by F. Kingdon Ward.

Some inflorescences are bracteate almost to the apex, others more than half-way. The bracts are more or less persistent. Otherwise the appearance of the plant is that of a typical *Erysimum*.

***Gaultheria suborbicularis*, W. W. Sm. Sp. nov.**

Species ex affinitate *G. nummularioidis*, Don, a qua foliis minimis suborbicularibus, floribus multo minoribus staminibus diversis satis recedit.

Fruticulus minimus prostratus. Caulis ramosus gracilis, hinc inde errans, infra defoliatuſ supra ſat folioſuſ pluſ minusve ſpardiſ fulvido-ſetoſuſ. Folia alterna coriacea latiffime ovata vel ſuborbicularia, circ. 6 mm. longa circ. 5 mm. lata, apice baſique rotundata, margine breviter remote nigro-ſetuloſa, ſupra viridia glabra infra pallidiora hinc inde nigro-ſetuloſa vel ſubglabra; coſta ſupra impreſſa infra paulo eminens nerviſ lateralibuſ utrinque obſcuriſ; petioluſ circ. 1 mm. longuſ. Floreſ miniſ axillareſ ſolitarii; pedicelli 1 mm. longi glabri; prope calyceſ bracteolae duae connatae 2 mm. longae ovatae acutiſcuſulae purpureo-tinctae. Calyx 2 mm. longuſ glaber 5-partituſ in lobuſ forma et colore bracteoliſ perſimileſ. Corolla circ. 3 mm. longa, late campanulata ad medium lobata lobis apice recurviſ, roſea ut videtur apice purpureo-tincta. Stamina 10, vix 1 mm. longa, filamentiſ coniciſ ſub lente minute papilloſiſ, antheraruſ tubuliſ breviffimiſ, ariſtiſ nulliſ. Styluſ filiformiſ vix 1 mm. longuſ. Fructuſ deeſt.

“China:—Western Yunnan, forming carpets under scrub-

rhododendrons at 15,000 ft." F. Kingdon Ward. No. 850 in Herb. Edin.

A puzzling dwarf species very closely allied to *G. nummularioides*, Don. The structure of the stamens suggests its being one form of a *Gaultheria* with dimorphic flowers. It differs, however, too much both in foliage and flower for me to attribute it to an abnormal form of *G. nummularioides* without further evidence. Small states of *G. nummularioides* from the Himalaya do not show the same foliage, nor do they appear to have dimorphic flowers.

Gentiana Beesiana, W. W. Sm. Sp. nov.

Species sectionis *Amarellae*, ex affinitate *Gentianae cyananthiflorae*, Franch.

Planta annua erecta 15-25 cm. alta, e basi ad apicem fastigiato-ramosa. Rami graciles flexiles quadrangulati rubri infra pubescentes, supra mox glabrescentes nitentes. Folia basilaria delapsa; caulina subremota, circ. 2 cm. longa, circ. 1 cm. lata, ovata vel oblongo-ovata, sessilia, apice obtusa, basi subrotundata, serratula, chartacea. Flores plerumque ternati, nonnunquam solitarii, ramos ramulosque terminantes, longe (1-3 cm.) pedicellati. Calyx 10-12 mm. longus, in lobos quinque fere ad basin partitus; lobi erecti, latitudine valde inaequales, ovati vel lanceolati vel lineari-lanceolatae (eodem flore), acuti, basi subsaccati, margine serratuli nigrescentes, textura foliis similes, extus praesertim in costa marginibusque sparse albo-pilosi. Corolla 2-2.5 cm. longa, coerulea; tubus late cylindricus, in sicco 6-7 mm. latus; lobi 1 cm. longi, oblongi, apice rotundati; plicae nullae; fimbriae fauce insertae, multae, 3-4 mm. longae, lineares vel lineari-spathulatae. Stamina in medio tubo inserta, vix ad summas fimbrias pertinentes. Ovarium oblongum; capsula (immatura) inclusa, sessilis, seminibus multis subglobosis pallido-brunneis nitentibus praedita.

"Plant of 6-9 inches. Flowers blue, plicae green. Open stony pasture on the eastern flank of the Lichiang Range. Lat. 27° 30' N. Alt. 13,000 ft. October 1910." G. Forrest. No. 6733.

(I do not find any plicae. Mr Forrest's note must refer to those edges of the corolla lobes which have been overlapped.)

Gentiana scabratopes, W. W. Sm. Sp. nov.

Species ex affinitate *Gentianae yunnanensis*, Franch., sed minor; caule ramosiore, calyce fere ad imum fisso inter alia differt.

Planta annua radicibus gracilibus 2.5-9 cm. alta, erecta. Caulis basi nudus, superne ramulis brevibus erectis vel paulo patentibus omnibus floriferis crebre ramosus, dense nigro-setosulo-scaber. Folia basalia sub anthesin nulla; caulina erecta pauca, cum inflorescentiis intermixta, 1.5-2.5 cm. longa, 1-1.5 cm. lata, ovata vel obovata, apice obtusa vel rotundata, basi late cuneata, in petiolum breve subalatum scabridulum angustata, supra viridia glabra infra in sicco nigrescentia, glabra nisi prope basin scabridulam, nervis subobscuris. Inflorescentiae multae congestae; flores ad apicem caulis et ramulorum 3-5-compacti. Calyx circ. 8 mm. longus, fere ad imum in lobos sublineares acutos apice nigrescentes fissus. Corolla laete coerulea infundibuliformis, circ. 14 mm. longa, lobis 3 mm. longis ovatis mucronulatis; plicae minutae. Stamina sub medio tubo affixa. Capsula (immatura) inclusa, non stipitata, lineari-oblonga seminibus 6-8 reniformibus.

"Plant of 1-2½ inches. Flowers bright blue, plicae dark maroon. Stony pasture on the eastern flank of the Lichiang Range. Lat. 27° 35' N. Alt. 12,000 ft. October 1910." G. Forrest. No. 6735.

Closely allied to *Gentiana yunnanensis*, Franch., but with a very different calyx. The dark underside of the erect leaves gives a very characteristic appearance to the plant.

***Gymnadenia calcicola*, W. W. Sm. Sp. nov.**

Species valde affinis *G. pseudo-diphylaci*, Kraenzl., sed caule bifoliato, floribus majoribus, labello in lobos tres longos lineares diviso recedit. Forsan varietas speciei citatae, sed intermediis deficientibus melius interim pro specie propria militat.

Tuberidia globosa, circ. 1 cm. diametro. Caulis 8-12 cm. altus, erectus vel nonnunquam curvatus, bifoliatus. Folia prope basin posita 4-7 cm. longa, ad 1 cm. lata, lanceolata vel oblanceolata vel sublinearia, obtusa vel acuta. Spica ad 4 cm. longa, 6-12-flora, bracteis ovato-lanceolatis acuminatis quam flores minoribus ovarium superantibus praedita. Sepala circ. 7 mm. longa, oblique lanceolata, subacuta, rosea. Petala sepalis aequilonga, linearia. Labellum ad 8.5 mm. longum basi integrum deinde trilobum, lobis linearibus, intermedio ad 6.5 mm. longo, lateralibus circ. 5 mm. longis, superficie hyalino-papillosa; calcar 5 mm. longum, incurvulum, apice obtusum incrassatum. Ovarium 5-6 mm. longum.

"Plant of 2-5 inches. Flowers rose. On limestone drift on the eastern flank of the Lichiang Range. Lat. 27° 35' N. Alt. 13,000 ft. September 1910." G. Forrest. No. 6536.

"Plant of 3-8 inches. Flowers rose, fragrant. Dry pasture

at north end of the Tali Valley. Lat. 25° 55' N. Alt. 7000 ft. November 1910." G. Forrest. No. 7375.

A much finer plant than *Gymnadenia pseudo-diphylax*, Kraenzl., but possibly a variety of that species which appears to be very variable in size of flower and lobing of labellum.

Habenaria Beesiana, W. W. Sm. Sp. nov.

Species habitu, foliis, inflorescentia persimilis *Habenariae Forrestii*, Schltr.; labello trifido differt.

Planta terrestis erecta gracilis 20-30 cm. alta. Tubera anguste oblongoidea. Caulis basi 2-3-foliatus, superne vaginis paucis acuminatis remotis praeditus, teres, glaber. Folia erecto-patentia, linearia acuta, glabra, 4-8 cm. longa, medio vix 2 mm. lata. Spica 7-12 cm. longa, subaxe multiflora. Bracteae erectae, ovato-lanceolatae, acuminatae, ad medium ovarium pervenientes. Flores in genere inter minores, virides. Sepalum intermedium erectum, ovatum, obtusum, circ. 4 mm. longum, lateralia deflexa, oblonga, obtusa intermedio aequilonga. Petala oblique ovato-lanceolata, obtusa, sepalis aequilonga vel paululum longiora; labellum circ. 5.5 mm. longum, glabrum, in lobos tres lineares fere ad basin divisum; lobus intermedius lateralibus paulo longior; ante ostium calcaris labellum carnosoincrassatum; calcar cylindricum, glabrum, incurvulum, ovarium aequans vel paulo superans. Ovarium cylindraceum 5-6 mm. longum, glabrum.

"Plant of 4-9 inches. Flowers green. Dry openings amongst scrub on the eastern flank of the Lichiang Range. Lat. 27° 30' N. Alt. 10,000 ft. August 1910." G. Forrest. No. 6404.

Very near *H. Forrestii*, Schltr., and from the same area. In one plant the lateral lobes of the labellum are very short, and suggest a transition between the two species.

Illigera grandiflora, W. W. Sm. et J. F. Jeffrey. Sp. nov.

Species in sectione *Appendiculatarum*, Dunn prope *I. trifoliatam*, Dunn ponenda; floribus maximis a speciebus omnibus adhuc cognitis facile distinguitur.

Frutex scandens 2-6 m. altus. Caulis striatus setis fulvidis plus minusve densis praesertim apud nodos praeditus, nonnunquam subglabrescens. Folia trifoliolata, petiolis 5-12 cm. longis, foliolis chartaceis ovatis 6-14 cm. longis, 4-12 cm. latis, abrupte acuminatis, basi rotundatis, lateralibus obliquis, supra glabris costa media et venis 4-5-paribus plus minusve fulvido-setosulis vel nonnunquam glabrescentibus; petioliuli 1.5-2 cm. longi. Flores in cymas densas petiolis breviores vel in paniculas folia

subaequantes dispositi; pedunculi communes ad 5 cm. longi, pedicelli dense fulvido-villosi, bracteae 1-2 cm. longae, foliaceae, lanceolatae vel oblanceolatae vel ellipticae. Flores albidii maculis lineisque minutis rubridis copiose ornati. Calycis tubus dense pubescens; lobi 12-14 mm. longi, circ. 5 mm. lati, oblongi, intus pubescentes. Petala sepalis similia et aequilonga vel paulo breviora. Stamina fere 8 mm. longa, filamentis 5-6 mm. longis, minute puberulis, antheris 2 mm. longis aureis, nectariis tubulosis circ. 4 mm. longis, parte basali pedicelliformi 1 mm. longa, parte superiore ovato-cupulari 3 mm. longa albida, glandulis disci sphaeroideis sessilibus. Stylus circ. 8 mm. longus, longiuscule setosus, stigmatibus undulato-dilatato. Fructus tetrapterus, 5-6 cm. latus, 3-3.5 cm. longus, glaber, alis coriaceis striato-venosis, majoribus 2.5-3 cm. latis ceteris multo minoribus 2-3 mm. latis.

"Scandent shrub of 8-15 ft. Sepals dull white, copiously speckled with minute dull cerise spots and lines; petals similar, with a ring of ten small sack-like nectaries at base; these white with dark-brown bases, anthers golden yellow. Open situations on scrub in the Mingkwong Valley, Yunnan. Lat. 25° 29' N. Alt. 6500 ft. June 1912." G. Forrest. No. 8495. *Type*.

"Scandent shrub of 6-10 ft. Flowers dull crimson-lake, anthers yellow. On trees and scrub on lava-bed west of Teng-yueh. Lat. 25° N. Alt. 5000 ft. May 1912." G. Forrest. No. 7765.

"Scandent shrub of 6-18 ft. In fruit. On scrub on western flank of the Shweli-Salwin divide. Lat. 25° 20' N. Alt. 9000 ft. August 1912." G. Forrest. No. 8929.

Impatiens nubigena, W. W. Sm. Sp. nov.

Species foliis superioribus cordato-amplexicaulibus subintegris inter species chinenses adhuc descriptas distinctissima.

Herba 10-30 cm. alta, glaberrima, caule ramosissimo erecto fere ad basin satis bene folioso. Folia alterna subintegra margine paulo undulata, tenuiter membranacea, dimorpha; inferiora longe petiolata, petiolo debili 1.5-3.5 cm. longo; lamina 1.5-3 cm. longa, 1-2 cm. lata, late ovata vel rhombifolia vel suborbicularis, basi late cuneata, apice rotundata vel obtusa; folia media et superiora sessilia cordato-amplexicaulia lobulis rotundatis ad 5 mm. diametro, ovato-oblonga, 2-3 cm. longa, 1-1.5 cm. lata, apice rotundata, nervis utrinque 5-7 obscuris. Inflorescentiae in axillis foliorum amplexicaulium per tres partes caulibus orientes, inferiores plerumque 1-florae, superiores saepius 2-florae; pedicelli 5-15 mm. longi, filiformes; bracteola ovata acuminata membranacea subpersistens sub flore posita.

Flores minimi 1 cm. longi vel minores, tenuissimi, albi. Sepala 2, late ovata, apice indurato-apiculata, basi rotundata, 3-4 mm. longa, 3-5-nervia. Vexillum orbiculare ad 6 mm. longum. Alae sessiles 9-10 mm. longae; lobus basalis oblique ovatus ad mediam alam pertinens; distalis fere duplo longior oblongo-lanceolatus. Labelli limbus 6-7 mm. longus, scaphiformis, horizontalis, subtus medio inter basin et apicem acutum calcare vestigiali vix 1 mm. longo, ut videtur incluso praeditus. Filamenta paulo complanata, antheris obtusis, circa pistillum cohaerentibus. Ovarium 3-4 mm. longum, subobtusum. Capsula ad 2.5 cm. longa, linearis. Semina oblonga, 2 mm. longa, minute crebre tuberculata, opaca, fusca.

"Plant of 4-12 inches. Flowers white. Moist situations amongst rhododendron scrub on the western flank of the Lichiang Range. Lat. 27° 25' N. Alt. 12,000 ft. August 1910." G. Forrest. No. 6368.

Kingdonia, Balf. f. et W. W. Sm. Genus novum Ranunculacearum.

Genus ex affinitate *Anemonearum*, fortasse prope *Thalictrum* melius positum, a quo folio solitario scapo unifloro inter alia abunde discrepat. Herba parva caudice perenni. Folia solitaria ambitu orbicularia, pedatim partita. Flores hermaphroditi solitarii scapo longo suffulti. Involucrum 0. Sepala 5 petaloidea. Petala 0. Stamina usque ad 15, filamentis erectis brevibus antheris minimis. Carpella plerumque 5-7, receptaculo parvo inserta uniovulata. Ovulum a media sutura ventrali pendulum. Achaenia (semimatura) eis *Thalictri* perispermia. Species unica e China occidentali.

Kingdonia uniflora, Balf. f. et W. W. Sm. Sp. nov.

Planta herbacea habitu *Adoxae*; rhizoma 5-20 cm. longum gracile; apicem rhizomatis versus inveniuntur squamae cymbiformes tenuiter membranaceae circ. 5 mm. longae e medio quarum oriuntur folium solitarium et scapus solitarius. Folium petiolo 5-7 cm. longo erecto glabro praeditum; lamina ambitu orbicularis 4-4.5 cm. diametro, pedatim partita in lobos quinque, late cuneatos, ipsos ad $\frac{1}{4}$ vel $\frac{1}{2}$ trilobulatos, margine exteriori argute apiculato-dentatos, supra viridis, infra subglauca, utrinque glabra, nervis basi divergentibus ramosis nec anastomosantibus, ad marginem longitudinaliter percurrentibus. Scapus 7-10 cm. altus, erectus nudus uniflorus gracilis glaber. Flos erectus in sicco circ. 8 mm. diametro. Receptaculum conicum breve vix 1 mm. superans. Sepala 5, circ. 6 mm. longa, medio circ. 2.5 cm. lata, subrhomboidea, apice acuminata

basi cuneata in unguem brevem 1 mm. longum, petaloidea, in sicco viridi-albida, purpureo-venulosa; venula primaria in media lamina duas laterales gignens, omnes ad marginem vel vix percurrentes, conspicuae; (aestivatio non nota; flores omnes omnino aperti; in sicco sepala remotiuscula). Petala 0. Stamina 10-15, erecta, brevia 2 mm. longa antheris minimis vix 0.5 mm. longis rimis lateralibus dehiscentibus. Carpella plerumque 5-7, primo stamina aequantia, ovario 1 mm. longo ventricosus stylo subulato 1 mm. longo erecto, deinde aucta, fructu (semimaturus) 4 mm. longo, stylo persistente erga suturam dorsalem deflexo, apice paululo uncinato; semen solitarium a media sutura ventrali pendulum.

"Western China:—In deep shade in damp gullies of Rhododendron forest at an elevation of 13,000 ft., in N.W. Yunnan, bordering on Tibet, in neighbourhood of Doker-la. Coll. July 1913." F. Kingdon Ward. No. 734 in Herb. Edin.

A very distinct genus of *Ranunculaceae* so far monotypic. The habit of the plant is that of a large *Adoxa*. The shape and texture of the leaf recall certain species of *Adiantum*, the structure of the flower suggests *Thalictrum*, especially in the shape of the fruit and the style. The half-ripe fruit seems to indicate that at maturity the style will be persistent and probably slightly bent or hooked at the apex. The uniovulate ovary allocates the genus somewhere in the neighbourhood of *Thalictrum*, but it can scarcely be said to be closely akin to that genus. The generic name is in honour of Mrs Marshall Ward, whose son, F. Kingdon Ward, discovered the plant on the borders of China and Tibet.

Lilium Forrestii, W. W. Sm. Sp. nov.

Species ex affinitate *Lilii Fargesii*, Franch.; foliis pro longitudine latis, floribus 1-2 nutantibus luteo-roseis recedit.

Bulbus 2-2.5 cm. diametro, squamis 10-12 carnosulis, ovatis, apice attenuatis. Caulis 45-90 cm. longus, erectus gracilis glaber, superne sat foliosus, inferne aphyllus. Folia 12-20, 3.5-6 cm. longa, 1-1.8 mm. lata, erecta, laxius imbricata, lanceolata vel oblanceolata, acuta vel subacuta, basi in insertionem latam late cuneata, 4 suprema verticillata, cetera alterna, carnosula, integra utraque facie glabra, supra viridia minutissime favosa, subtus pallidiora rugosula. Flores 1-2, terminales, cernui, pedunculis 12-15 cm. longis glabris. Perianthium 4.5 cm. longum, pallido- vel luteolo-roseum, intus crebre kermesinomaculatum, extus glabrum; segmenta lanceolata, 4.5 cm. longa, 1 cm. lata, obtusa vel subobtusa, apice indurata, mox ex toto recurva, intus ad basin cristis duabus paleaceo-fimbriatis

1.5 cm. longis sulco nectarifero parallelis pererrata. Stamina circ. 2.5 cm. longa, filamentis glabris, antheris circ. 9 mm. longis, polline luteo. Stylus glaber, ovario 1 cm. longo duplo longior, stigmatibus parvo obscure trilobo. Fructus deest.

"Plant of 1½-3 ft. Flowers yellowish rose with deep lake crimson markings, fragrant. Dry, open situations in pine forests on the eastern flank of the Lichiang Range. Lat. 27° 30' N. Alt. 10,000-11,000 ft. July 1910." G. Forrest. No. 6224.

"Plant of 18 inches. Flowers shaded pale rose, spotted a deeper shade. Dry, shady situations in pine forests on the eastern flank of the Lichiang Range. Lat. 27° 30' N. Alt. 12,000 ft. September 1910." G. Forrest. No. 6582.

Marsdenia oreophila, W. W. Sm. Sp. nov.

Species ex affinitate *Marsdeniae lucidae*, Edgew.; foliis subtus rufo-tomentellis, pedunculis longioribus, corolla intus dense pilosa, inter alia differt.

Frutex scandens 2-3 m. altus. Caulis teres molliter denseque albo-pilosulus. Folia opposita, petiolo 2-3 cm. longo dense pilosulo praedita, 6-12 cm. longa, 4-7 cm. lata, elliptica, basi rotundata apice rotundata vel breviter abrupte acuminata, coriacea, supra sparse pilosa, infra pallidiora molliter rufo-tomentella, nervis 4-5 paribus vix conspicuis, arcuatis. Pedunculi petiolis subsimiles, 3-5 cm. longi; cymae umbelliformes 10-15-florae, pedicellis ad 2 cm. longis. Calyx in lobos quinque basi paulo imbricatos ovatos obtusos, extus dense pilosos, intus glabros partitus, basi intus glandulis circ. 10 praeditus. Corolla ad 1 cm. longa, subrotata, in lobos lanceolato-oblongos obtusos recurvo-patentes extus subglabros, intus dense albo-pilosos ad tres partes divisa. Coronae squamae 5 erectae, antheras aequantes; pars dorso antherarum adnata carnosula, 2-umbonata, circ. 2 mm. longa; apice pars libera linguiformis membranacea circ. 1 mm. longa. Stamina circ. 3 mm. longa; filamenta lata carnosula cuspidibus duabus sub antheris positae cartilagineis adnatis praedita; antherae membrana orbiculari inflexa instructae; pollinia oblonga circ. 1 mm. longa. Stylus filiformis 5-6 mm. longus flexuosus. Fructus deest.

"Scandent shrub of 6-10 ft. Flowers deep maroon, white on exterior. On shrub in dry situations at the north end of the Lichiang Valley. Lat. 27° 25' N. Alt. 9000 ft. July 1910." G. Forrest. No. 6208.

Orchis Beesiana, W. W. Sm. Sp. nov.

Species ex affinitate *Orchidis Giralbianae*, Kränzl.; bracteis et floribus minoribus inter alia recedit.

Planta 25-50 cm. alta, tuberculis parvis globoso-oblongis. Caulis gracilis substrictus. Folia plerumque 3, remota, 6-12 cm. longa, 1-1.5 cm. lata, oblongo-lanceolata vel lineari-lanceolata, acuta, subcoriacea. Scapus supra folia nudus vel bracteis foliaceis 1-2 praeditus. Spica multiflora (12-20), plus minusve densa, bracteis lanceolatis acuminatis ovarium vix aequantibus viridibus instructa. Sepala 5-6 mm. longa, circ. 2 mm. lata, oblonga, obtusa reflexa, sicut petala rosea. Petala 5 mm. longa, 2.5 mm. lata, ovato-elliptica, obtusa; labellum magnum, 8 mm. longum, circ. 7 mm. latum, profunde trilobum, lobis subquadratis, paulo erosulis, intermedio vix bilobulo, calcari circ. 1 cm. longo recto obtuso, ovarium paulo superante.

"Plant of 9-20 inches. Flowers rose. Stony mountain meadows on the eastern flank of the Lichiang Range. Lat. 27° 25' N. Alt. 11,000-12,000 ft. August 1910." G. Forrest. No. 6464.

Ostryopsis nobilis, Balf. f. et W. W. Sm.

Species haec pulchra ab *O. Davidiana*, Decne. (adhuc specie unica) foliis multo majoribus subtus dense fulvo-tomentosis fructibus ad rhachim elongatam laxius spiciformiter dispositis nec in capitulum conglomeratis inter alia signa minora differt.

Frutex 2-4 m. altus, ramosus, ramulis primo densissime cinereo-tomentosis deinde subglabrescentibus. Folia 6-12 cm. longa, 5-10 cm. lata, alterna, late ovata vel rotundato-ovata, apice rotundata vel subrotundata, basi breviter et \pm oblique cordata, subregulariter dentata dentibus indurato-apiculatis, supra subglabra costa venisque \pm fulvo-pilosis, subtus densissime fulvo-tomentosa nervis 7-9-paribus supra impressis infra paulo eminentibus; petioli breves 5-10 mm. longi tomentosi; stipulae binae lanceolatae submembranaceae utrinque pilosae, subpersistentes. Flores masculi desunt. Flores feminei in spicam terminalem brevissimam tomentosam dispositi; bractae ovatae acuminatae biflorae in fructu persistentes auctae; flos unusquisque involucello convoluto \pm regulariter 2-4-lobo praeditus; spica fructifera 3-4 cm. longa laxiuscula; nuculae circ. 5 mm. longae, 3 mm. latae paulo compressae, perianthii limbo post anthesin accreto coronatae; involucella circ. 12 mm. longa, cymbiformia, acuminata apice 2-4-lobulata coriacea extus densius intus sparsius tomentosa.

"Shrub of 6-12 ft. In fruit. In open thickets on the mountains in the N.E. of the Yangtze bend. Lat. 27° 45' N. Alt. 10,000-11,000 ft. June 1913." G. Forrest. No. 10,343.

A very interesting addition to a genus hitherto monotypic.

Parrya Forrestii, W. W. Sm. Sp. nov.

Inter species adhuc descriptas floribus flavis conspicua.

Planta 10-20 cm. alta; radix praelonga, crassa, multiceps. Caulis plures subdecumbentes, basi vaginis emarcidis stramineis vestiti, supra foliosi, pilis albidis adpressis medio affixis hinc inde induti. Folia longe petiolata petiolo 4-6 cm. longo, spathulata; lamina 2-4 cm. longa, 1-1.5 cm. lata, apice obtusa vel rotundata, nonnunquam obtuso-mucronulata, basi in petiolum leviter cuneatim attenuata, membranacea, integra vel remote 5-6-denticulata, utrinque pilis albidis adpressis medio affixis sparsius praedita, pallide virentia, infra vix pallidiora, nervis obscuris. Scapi breves, foliosi; racemi 6-12-flori, breves, supra folia non eminentes; bractae inferiores foliis similes, superiores reductae; pedicelli primo 5-10 mm. longi, tandem ad 2.5 cm. elongati. Sepala 7-8 mm. longa, oblonga, margine scariosa, erecta subaequalia, extus sparse albo-pilosa. Petala 1.5 cm. longa, spathulata, ungue 8 mm. longo, flava. Stamina 8 mm. longa, antheris 1.5 mm. longis. Siliqua compressa, ad 6 cm. elongata, 3-4 mm. lata, valvis uninerviis, pilis adpressis medio affixis sparse induta; stylus brevissimus; semina 1-seriata, 5-6, orbicularia, compressissima, (vix matura) circ. 3 mm. diametro.

"Plant of 4-8 inches. Flowers yellow. On limestone drift on the western flank of the Lichiang Range. Lat. 27° 25' N. Alt. 12,000-13,000 ft. August 1910." G. Forrest. No. 6518.

Phyllanthus Forrestii, W. W. Sm. Sp. nov.

Species sectionis *Reidiae* ex affinitate *Phyllanthi pulchri*, Wall.

Fruticulus 15-20 cm. altus, erectus; pars inferior caulis subterranea vel inter saxa ut videtur errans, nuda; pars superior ramosa foliosa; ramuli hornotini subfastigiati 10-16 cm. longi, gracillimi rubridi glabri. Folia alterna disticha oblique imbricata, 1-2 cm. longa, circ. 1 cm. lata, orbicularia vel oblonga vel obovato-oblonga, apice rotundata breviter apiculata, basi rotundata, integerrima, supra viridia subtus glaucescentia, utrinque glabra, nervis 3-4 paribus obscuris; petiolus brevissimus vix 1 mm. longus; stipulae lineari-lanceolatae, circ. 2 mm. longae, acuminatae, pallido-virides. Flores parvi axillares, ♂ pedicellati saepius in axillis inferioribus pauci, ♀ in axillis superioribus solitarii, longius pedicellati; pedicelli ad 1 cm. longi, graciles, dense scabriduli. Floris masculini sepala 4, petaloidea, ovata, alte serrato-lacerata, circ. 2.5 mm. longa, appendiculo filiformi circ. 2 mm. longo apice praedita; cum appendiculis flos circ. 9 mm. diametro; glandulae reniformes

carnosulae apice crenato-lobatulae; stamina 2, antheris circa pistillodium minutum ad apicem columnae sessilibus, loculis disjunctis cruciatim dispositis antheras 4 uniloculares simulantibus. Floris feminini sepala 6, biseriata, petaloidea, ovato-lanceolata, serrato-lacerata, cum appendiculo 2 mm. longo circ. 6 mm. longa; glandulae reniformes carnosulae apice crenato-lobatulae; ovarium dense scabridulum; styli 3, bifidi. Fructus deest.

"Shrub of 6-8 inches. Flowers deep crimson. Dry stony meadows on the margins of pine forests on the eastern flank of the Lichiing Range. Lat. 27° 40' N. Alt. 10,000-11,000 ft. July 1910." G. Forrest. No. 6119.

Pieris Forrestii, Harrow. Sp. nov.

Species valde affinis *Pieridi formosae*, D. Don; foliis floribusque primo intuitu persimilis est sed habitu, sepalis albidis, corollâ ore minore pentagono nec rotundo lobis brevissimis erectis paulo diversâ, stylo graciliore satis divergit.

Frutex suberectus ramis pendentibus, sempervirens, in horto nunc 1 m. altus, glaber. Folia 6-12 cm. longa, 2-3.5 cm. lata, oblongo-lanceolata vel oblanceolata, breviter acuminata, basi cuneata vel subrotundata, crebre serrulata, coriacea, glaberrima, utrinque pulchre reticulata venis translucentibus, nitida; petioli 4-7 mm. longi. Flores penduli in paniculas terminales pendentibus ad 15 cm. longas latasque dispositi; rhachis, ut pedicelli bracteae sepala, glandulis minutis nigris conspersa; bracteae lineari-lanceolatae, 2-3 mm. longae; pedicelli circ. 5 mm. longi, graciles, infra medium bracteolis duabus parvis praediti. Calycis albidae lobi circ. 5 mm. longi, ovato-lanceolati, coriacei, acuti, glabri glandulis minutis exceptis. Corolla urceolaris, alba, circ. 9 mm. longa, ore parvo 3 mm. diametro pentagono, lobis brevissimis erectis. Stamina 10 inclusa; filamenta alba, parce pilosa, basi dilatata; antherae dorso longiuscule biaristatae. Ovarium depresso-globosum, stylo gracili corollam aequante. Fructus deest. *Gaultheria Forrestii*, Hort. nec Diels in Gardening Illustrated, vol. xxxv (1913), 266.

China:—Yunnan; known only from plants grown in the nurseries of Bees Limited, and in the Royal Botanic Garden, Edinburgh, from seed obtained by George Forrest.

This new species is a most graceful shrub, closely resembling *Pieris formosa*, Don, and at first sight easily mistaken for it. It differs, however, in several minor points, the sum of which is beyond mere varietal divergence. The habit is much more pendent, with the leaves often peculiarly reflexed along the branches; the pedicels are slenderer with narrower bracts;

the sepals are whitish; the urceolate corolla is of somewhat different shape, longer, rounder, with a very characteristic narrow mouth with straight-cut pentagonal edges, the lobes shorter and more erect; the style is longer and slenderer. The plant so far is difficult to propagate as compared with its ally.

***Polygonum lichiangense*, W. W. Sm. Sp. nov.**

Species valde affinis *Polygono polystachyo*, Wall. ex Himalaya; ramis stipulisque setosis, foliis supra setosis infra dense cinereo-tomentosis recedit.

Planta 60–120 cm. alta, erecta, basi suffruticosa, ramis ramulisque striatis setis albidis vel fulvidis e pustulis parvis ortis plus minusve dense praeditis. Folia 6–12 cm. longa, 2–3 cm. lata, lanceolata vel oblongo-lanceolata, apice caudato-acuminata, basi in petiolum brevissimum late cuneata, margine undulata vel subintegra, chartacea, supra viridia setis albidis adpressis modice instructa, infra tomento denso cinereo praedita, nervis 8–12-paribus obscuris; stipulae 2–3 cm. longae saepius lanceolatae membranaceae setosae brunneae. Inflorescentiae amplae thyrsoidae-paniculatae; ramuli dense patenti-albidopilosi; bractee bracteolaeque lanceolatae membranaceae brunneae; pedicelli graciles, circ. 2 mm. longi; flores subcongesti 7–8 mm. diametro. Perianthium album fere ad imum in segmenta quinque inaequalia late obovato-spathulata fissum. Fructus maturus deest.

"Plant of 2–4 ft. Flowers creamy-white. Open situations on the margins of mixed forests on the eastern flank of the Lichiang Range. Lat. 27° 40' N. Alt. 10,000–11,000 ft. August 1910." G. Forrest. No. 6296.

***Porana decora*, W. W. Sm. Sp. nov.**

Species pulchra ex affinitate *Poranae grandiflorae*, Wall. et *P. sinensis*, Hemsl.; ab illa sepalis dense sericeo-villosulis, ab hac tubo corollae longo angustissimo inter alia discrepat.

Frutex alte scandens ramis longis volubilibus densius adpresse incano-villosis. Folia inferiora petiolo 4–6 cm. longo supra canaliculato incano-villosulo praedita; lamina usque ad 12 cm. longa, usque ad 10 cm. lata, late cordiformis apice acute abrupte acuminata, basi sinu lato alte cordata, papyracea, supra ± dense adpresse sericeo-villosula, infra dense incano-villosula venis primariis plerumque 7, utrinque conspicuis; folia in regione inflorescentiae multo minora, sessilia vel brevissime petiolata, caulem amplectantia, ad 3.5 cm. longa, ad 2.5 cm. lata, cetera inferioribus similia. Flores in racemos paniculatos pendentes dispositi; racemi in axillis foliorum superiorum subbractei-

formium orientes, in quaque panicula 10-20, 3-12-flori; pedunculi 5-10 cm. longi, sparse vel dense incano-villosuli, pedicelli circ. 1 cm. longi subglabri vel incano-villosuli bracteis subulatis vix 1 mm. longis incano-villosulis praediti. Sepala 5, rarius 6, aequalia vel subaequalia circ. 2 mm. longa, lanceolata acuminata dense sericeo-villosula, sub fructu valde aucta circ. 3 cm. longa, 5-7 mm. lata, subaequalia, oblonga, apice apiculata, membranaceo-scariosa, basi villosula excepta glabra, purpureo-venosa. Corolla roseo-alba circ. 2.5 cm. longa, anguste infundibuliformis, tubus circ. 1.5 cm. longus, parte inferiore linearis 1 mm. latus, superne ampliatus, glaber; limbus in sicco 1.5-2 cm. latus. Stamina vix medium tubum superantia glabra filamentis filiformibus. Ovarium circ. 1 mm. longum, glabrum; stylus 3-4 mm. longus glaber stigmatibus capitato; capsula subglobosa 6-7 mm. longa.

China:—Province of Yunnan.

"Climbing shrub with long branches; leaves white below; flowers delicate, rose-white, in loose pendent masses. Rocks in the valley of Ma-li-ouan. Altitude 2600 m. August 1913." Coll. E. E. Maire. No. 64 in Herb. Edin.

The same in fruit. November 1913. Coll. E. E. Maire. No. 65 in Herb. Edin.

Potentilla Forrestii, W. W. Sm. Sp. nov.

Species valde affinis *Potentillae niveae*, Linn.; statura majore, foliis subtus incano-tomentosis, segmentis calycis exterioribus obovatis profunde trifidis, carpellis maturis stylo brevioribus recedit. Ab varietatibus omnibus illius speciei polymorphae ita differt ut vix recte in grege earum collocari possit.

Caudex crassus multiceps caudiculis caespitosis residuis fuscis stipularum indutis. Caules floriferi numerosi (± 12), mediocriter validi, erecti vel adscendentes 20-30 cm. longi oligophylli, pauciflori, sicut pedunculi plus minusve incano-tomentosi. Folia radicalia plerumque ternata, interdum 4-5-nata (segmentis externis multo minoribus), caulina minora ternata, floralia reducta ternata vel simplicia; petioli foliorum radicalium 5-15 cm. longi, incano-tomentosi atque (saepe) longius villosi; petioli foliorum superiorum 5-20 mm.; stipulae fol. rad. scariosae ferrugineae basi breviter adnatae auriculis lanceolatis, caulinae herbaceae oblongo-lanceolatae acutae integrae vel apice 3-4-incisae; foliola sessilia, medianum nonnunquam petiolulatum, ambitu obovata, rarius oblonga, plerumque 2-3 cm. longa, 1-1.5 cm. lata, grosse serrata, serraturis circ. 14 oblongis 4-5 mm. longis acumine villosulo instructis, supra densius parcius adpresse pilosa, subtus tomento incano dense

obtecta, nervis supra impressis subtus paulo elevatis. Inflorescentiae plerumque 1-3-florae; pedunculi ad 8 cm. longi; flores 1.5-2 cm. lati. Calyx longiuscule dense incano-villosus; sepala exteriora circ. 8 mm. longa interioribus plerumque longiora, ambitu obovata vel ovata in lobos lineares vel lineari-lanceolatos profunde 3-(rarius 4-5)-fida, exteriora 6-7 mm. longa, lanceolata, acuta. Petala circ. 1 cm. longa, late obovata flava. Stamina 20 filamentis brevibus; annulus staminifer glaber disco angusto albo-piloso a receptaculo separatus. Carpella numerosa receptaculo albo-piloso inserta ovoidea levia circ. 0.5 mm. longa; stylus primo basi vix incrassatus, sed in maturo fructu certe ad *Conostylas* spectat, circ. 2 mm. longus; carpella matura circ. 1 mm. longa, stylo duplo breviora.

Only known in cultivation in the Royal Botanic Garden, Edinburgh, but almost certainly from the province of Yunnan, China. It was found among seedlings of Chinese species, the parent plants of which were collected by George Forrest. It is not, however, represented among the *Potentillas* of Mr. Forrest's Chinese collections. *Potentilla nivea*, Linn., is not recorded from Southern China and does not appear in the recent collections of Mr. Forrest. *Potentilla nivea*, Linn., var. *elongata*, Th. Wolf, a Central Asiatic and Mongolian plant, comes nearest to the new species. None of the Himalayan forms approach the Yunnan plant. Owing to the characteristic calyx and long style, I have separated it from *P. nivea*, Linn., though with hesitation in view of the polymorphic nature of that species. In the description I have followed closely the sequence of Dr. Wolf, so that comparison of the two species can easily be made.

***Potentilla taliensis*, W. W. Sm. Sp. nov.**

Species affinis *Potentillae pedunculari*, Don sed inflorescentia corymbosa multiflora inter alia differt.

Planta 20-40 cm. alta. Caudex crassus residuis fuscis stipularum dense vestitus pauciceps. Caules floriferi erecti vel ascendentes graciles 1-2-phylli, folia radicalia aequantes vel paulo superantes, apice floribus 8-10 subaxe corymbosi, sicut petioli et pedunculi longiuscule albo-villosi eglandulosi; folia radicalia magna, petiolo 2-4 cm. longo, non interrupte pinnata, circ. 15-juga, petiolo incluso 10-20 cm. longa, ambitu oblonga; caulina plerumque solummodo unum in tertio superiore caulis, multo minora circ. 5-juga, petiolo 1-1.5 cm. longo praedita; floralia multo reducta simplicia; stipulae foliorum radicalium scariosae ferrugineae petiolo longe adnatae, illae folii caulini magnae herbaceae late-ovatae incisae, illae foliorum floralium lanceolatae acutae parcius incisae vel subintegrae; foliola foli-

orum radicalium non contigua, basi lata sessilia, basin folii versus magnitudine sensim decrescentia, superiora 2-2.5 cm. longa, 6-8 mm. lata infima 5-8 mm. longa, ambitu oblonga, circumcirca inciso-serrata, supra viridia subglabra vel parce pilosa, subtus in venis venulisque dense pilis longis adpressis argenteo-sericea. Flores longe pedunculati, conspicui, circ. 2 cm. lati. Sepala externa lanceolata integra, interna longiora ovata, omnia parcius sericeo-pilosa. Petala obovato-orbiculata integerrima, calycem duplo superantia, flava. Stamina 20 annulo glabro inserta. Receptaculum albo-pilosum; carpella (immatura) globosa fusca stylo laterali praedita.

"Plant of 9-15 inches. Flowers yellow. In alpine pasture on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 10,000-11,000 ft. Aug. 1910." G. Forrest. No. 7017.

***Randia lichiangensis*, W. W. Sm. Sp. nov.**

Species affinis *Randiae tetraspermae*, Roxb.; corollae flavae tubo brevissimo inter alia differt.

Frutex 60-120 cm. altus. Rami crassiusculi rigidi cortice brunneo rugosulo obtecti, fulvo-pilosuli; ramuli foliati floriferique rigidi breves, 0.5-3 cm. longi, pilosuliores, stipulis foliorum emortuorum multis congestis saepe praediti. Folia brevissime (vix 1 mm.) petiolata 1-1.5 cm. longa, 1-1.2 cm. lata, late ovata vel obovata, apice rotundata vel obtusa, basi late cuneata vel subrotundata, chartacea, atroviridia integra, supra sparse pilosula, infra densius nervis circ. 3 paribus subeminentibus; stipulae latissime ovatae, squamiformes, brunneo-membranaceae, mucronatae, fulvo-ciliatae, diu persistentes. Flores ad apices ramulorum solitarii, parvi, basi stipulis tecti. Calyx ad 3 mm. longus, extus pilosulus, intus glaber, ad medium vel ultro in lobos triangulares acutos ciliatos divisus. Corolla hypocrateriformis, vix 8 mm. longa, teste collectore flava; tubus brevissimus vix 3 mm. longus, intus albo-hirsutus; lobi circ. 5 mm. longi, ovati, patentes, extus glabrescentes, intus sparse pilosuli, integri. Stamina 5, exserta, filamentis brevissimis, antheris linearibus acutis fere 3 mm. longis. Stylus fusiformis. Fructus deest.

"Shrub of 2-4 ft. Flowers yellow. Amongst scrub in dry situations on the divide between the Hocking and Lichiang Valleys. Lat. 26° 50' N. Alt. 8000-9000 ft. May 1910." G. Forrest. No. 5541.

***Rhododendron cuneatum*, W. W. Sm. Sp. nov.**

Species affinis *R. Augustinii*, Hemsl. foliis minoribus infra glabris, calyce valde diverso recedens; ad *R. polylepis*, Franch., ad *R. Searsiae*, Rehder et Wilson, ad *R. heliolepis*, Franch. ad

R. deterrentis, Franch. spectat; ab omnibus tamen foliis calyceque discrepat.

Frutex 1-1.5 m. altus, erectus, ramosus; ramuli hornotini breves initio dense fulvo-lepidoti, demum fusci et verruculosi, vetustiores cinerei decorticantes; gemmae florales ovoideae perulis obovatis vel oblongis, exterioribus acutiusculis, interioribus truncatis, omnibus in medio dorso dense nitenti-lepidotis, margine albo-ciliolatis. Folia 2.5-3.5 cm. longa, 1-1.5 cm. lata, oblanceolata vel lanceolata vel subelliptica, apice subacuta vel subobtusata, indurato-apiculata, basi cuneata saepe latius, margine plus minusve revoluta, coriacea, supra atroviridia, rugosula, nitidula squamulis crebris vix contiguis tandem marcescentibus albidis conspersa, subtus pallidiora squamulis contiguis nitenti-fulvidis vestita; costa media supra impressa, subtus elevata nervis secundariis obsoletis. Flores 1-3 fere umbellati, pedicelli 5-10 mm. longi, nitenti-lepidoti; bractae lineares vel oblongo-lanceolatae, albo-ciliolatae, caducae. Calyx cupularis 8-9 mm. longus, membranaceus, fere ad imum fissus in lobos subaequales ellipticos apice obtusos vel rotundatos margine crispatos albo-ciliolatos, in medio dorso rubescentes atque nitenti-lepidotos, caetera flavescentes. Corolla infundibuliformis roseo-lavendulacea, circ. 2.5 cm. longa, 5-loba, tubo circ. 1 cm. longo, ad fauces glabro, intus ad partem villosulam staminum ipso albo-villosulo, lobis circ. 1.5 cm. longis erecto-patentibus subellipticis vel ovatis, apice rotundatis. Stamina 10, inaequalia, longiora corollam fere aequantia, filamentis purpureis paulo complanatis, in sextante inferiore basi ipsa excepta albo-villosulis, antheris circ. 1.5 mm. longis brunneis. Ovarium conicum, circ. 2 mm. longum, dense lepidotum; stylus purpureus glaber, longiuscule exsertus, fere 3 cm. longus, stigma lobulato-capitato, atropurpureo.

"Shrub of 3-5 ft. Flowers rose-lavender. On the margins of pine forests on the eastern flank of the Lichiang Range. Lat. 27° 35' N. Alt. 12,000 ft. October 1910." G. Forrest. No. 6738.

***Rhododendron oreotrephes*, W. W. Sm. Sp. nov.**

Species affinis *Rhododendro rigido*, Franch.; foliis supra vix lucidis, infra dense lepidotis, floribus multo majoribus inter alia recedit.

Arbor vel frutex 5-8 m. alta, ramulis rigidis cortice griseo tectis; gemmae ellipticae acutiores, squamulis inferioribus orbicularibus coriaceis subglabris, superioribus obovatis membranaceis extus dense lepidotis margine albo-ciliolatis. Folia 4.5-5 cm. longa, 2.5-3 cm. lata, ovata vel elliptica, subacuta, brevis-

sime indurato-apiculata, basi rotundata, saepe breviter cordatula, rigide coriacea, supra glabra, infra dense lepidota subglauca, nervis 7-9 paribus, supra subobscuris, infra obscurissimis; petiolus 8-13 mm. longus glaber. Flores 4-5-nati, suberecti, 3-3.5 cm. longi, saturate roseo-lavendulacei (ex collectore), saturatius maculati atque striati; pedicelli 2.5-3.5 cm. longi, sparse lepidoti. Calyx circ. 2 mm. longus, membranaceus, dense lepidotus, in lobos quinque ovatos obtusos fere ad imum fissus. Corolla 3-3.5 cm. longa, late infundibuliformis glaber; tubus basi 5 mm. latus, ad 2 cm. ore ampliat; lobi patentes ovati vel subrotundati, integri. Stamina 10, tubo exserta, filamentis supra glabris, infra dense albo-pilosis. Ovarium circ. 5 mm. longum, oblongum, dense lepidotum, stylo glabro corollam aequante. Fructus deest.

"Shrub or tree of 15-25 ft. Flowers deep rose-lavender with darker markings. In rhododendron forest on the western flank of the Lichiang Range. Lat. 27° 20' N. Alt. 11,000-12,000 ft. June 1910." G. Forrest. No. 5873.

Closely allied to *Rhododendron rigidum*, Franch., but with different leaves and larger flowers.

***Rhododendron prostratum*, W. W. Sm. Sp. nov.**

Species valde affinis *Rhododendro saluenensi*, Franch.; habitu prostrato, foliis minimis ellipticis supra rugosulis lucidis habitum tota margine ciliatis, floribus solitariis vel binis, longiuscule pedicellatis, corollae tubo brevissimo inter alia differt; calycis segmentis miro modo appropinquat; praeterea ad *R. dendrocharin*, Franch. spectat quod tamen calyce corollaque multo minore facile distinguitur.

Fruticulus 5-10 cm. longus, humi prostratus, ramosus; ramuli hornotini breves, foliosi, longe rufo-setosi, lepidoti, vetustiores fuscii, mox decorticantes, omnes apice juniorum florifera excepta solo adpressi; gemmae ovoideae perulis ovatis vel ellipticis extus dense lepidotis margine albo-ciliatis. Folia 6-8 mm. (raro 12 mm.) longa, circ. 5 mm. (raro 7 mm.) lata, elliptica, apice rotundata vel obtusa, minute apiculata vel breviter emarginata, basi rotundata vel late cuneata, margine revoluta, primo ubique longe albo-ciliata, deinde glabra, coriacea, supra atroviridia, rugosula, lucida, squamulis absentibus nisi perpauca in prima aetate, subtus squamulis contiguis subflavidis vel rufescentibus vestita; costa media supra impressa, subtus evanida, nervis secundariis supra rugositatem efficientibus, infra invisibilibus; petiolus 1-2 mm. longus, sparsius lepidotus atque rufo-setosus. Flores saepius solitarii, nonnunquam bini e gemma terminali orti, pedicellis 1-2 cm. longis,

lepidotis et simul dense rubro-setosis instructi, ut videtur subcernui. Calyx ei *R. saluenensis* simillimus, membranaceus, extus sparsius lepidotus vel elepidotus, ex toto rubescens, fere ad imum in lobos quinque ovatos vel obovatos vel suborbiculares circ. 7 mm. longos albo-ciliatos fissus. Corolla perlate infundibuliformis, fere 2 cm. longa, kermesina, hinc inde saturatus notata, 5-loba, tubo 5-6 mm. longo, intus ad fauces albo-villoso, lobis late ovatis vel suborbicularibus, 12-15 mm. longis, 10-12 mm. latis extus in medio dorso sparsius lepidotis atque albo-villosulis, nonnunquam elepidotis atque subglabris. Stamina 8-10, corolla multo minora, filamentis purpureis circ. 9 mm. longis in sextante inferiore albo-villosis, antheris circ. 1 mm. longis, ochraceis. Ovarium circ. 3 mm. longum, conicum, dense lepidotum; stylus circ. 1.5 cm. longus, purpureus glaber stigmate lobatulo-capitato. Capsula deest.

"Prostrate shrub of 2-4 inches. Flowers crimson, with a few darker markings. On rocks and peaty moist soil almost at the limit of vegetation on the eastern flank of the Lichiang Range. Lat. 27° 20' N. Alt. 15,000-16,000 ft. June 1910." G. Forrest. No. 5862.

A species very near indeed to *R. saluenense*, Franch.; the latter species as described by Franchet in Journ. de Bot., xii (1898), 263, appears to be very variable, especially in the size of the leaves; it differs *ex descriptione* from *R. prostratum* in habit, leaves, pedicels, and corolla, but not to a great degree in any one of these characters. I have not seen the original types collected by Soulié, but Forrest No. 511, from the same area (Mekong-Salwin divide), was compared at Paris with these types and considered conspecific. This sheet, No. 511, is not very ample, but presents several differences from No. 5862 from the Lichiang Range; there is, however, a great similarity in the peculiar calyx, and this similarity, together with the variability in size of leaf as noted by Franchet, has caused me much hesitation in separating No. 5862 by something more than a varietal name.

Rhododendron rupicolum, W. W. Sm. Sp. nov.

Species ex affinitate *Rhododendri fastigiati*, Franch.; foliis floribusque differt; *R. verruculosum*, Rehder et Wilson, *R. Edgarianum*, Rehder et Wilson, *R. nitidulum*, Rehder et Wilson, inter alia signa floribus solitariis recedunt; fortasse *R. violaceum*, Rehder et Wilson, (a nobis non visum) ex Szechuan proximum est sed ex descriptione foliis angustioribus, calyce multo minore inter alia distinguitur.

Frutex 60-120 cm. altus, habitu *R. fastigiato*, Franch.

simillimus, ramosissimus, ramis saepe pseudo-dichotome abeuntibus; ramuli hornotini dense fusco-lepidoti, vetustiores cinerei atque decorticantes; gemmae ovoideae subobtusae, perulis paucis suborbicularibus vel ellipticis extus dense lepidotis margine albo-ciliolatis. Folia circ. 1.5 cm. longa, 7-8 mm. lata, elliptica, apice rotundata vel obtusa, minute apiculata, basi rotundata, rarius late cuneata, margine vix vel paulo revoluta, coriacea, supra atroviridia squamulis nitidulis omnino oblecta, subtus squamulis contiguis flavescentibus et fuscis (intermixtis) vestita; costa media supra impressa, subtus conspicua, nervis secundariis evanidis; petioli 2-3 mm. longi dense lepidoti. Flores 2-5 e gemma terminali orti, pedicellis circ. 2 mm. longis dense lepidotis instructi. Calyx cupularis 4-5 mm. longus, firmus, persistens, extus dense lepidotus, atropurpureus, profunde 5-lobus, lobis aequalibus vel inaequalibus, ellipticis vel ovatis, rotundatis vel obtusis margine albo-ciliatis. Corolla late infundibuliformis, circ. 1.5 cm. longa, saturate purpurea, 5-loba, tubo 6-7 mm. longo intus ad fauces albo-villoso, lobis subellipticis apice rotundatis 8-9 mm. longis circ. 5 mm. latis extus in medio dorso sparsius nitenti-lepidotis. Stamina 8-10, corollam subaequantia, filamentis purpureis circ. 1.2 cm. longis in sextante inferiore basi ipsa excepta villosis, antheris 1 mm. longis ochraceis. Ovarium conicum dense lepidotum; stylus circ. 1.7 cm. longus, stamina superans, purpureus, glaber, stigmatate capitato. Capsula deest.

"Shrub of 2-4 ft. Flowers deep rich plum-purple. Amongst rocks on dry barren pasture on the western flank of the Lichiang Range. Lat. 27° 20' N. Alt. 14,000 ft. June 1910." G. Forrest. No. 5865.

Not matched in the herbaria of Kew or Paris, but closely related to *R. fastigiatum*, Franch. Among the closely allied members of the section *Osmothamnus* it is conspicuous by the colour of the flower.

Rhododendron Traillianum, G. Forrest et W. W. Sm. Sp. nov.

Species affinis *Rhododendro adenopodo*, Franch. quod foliis subtus albidis, lobis calycis longioris glanduloso-ciliatis, ovario setoso inter alia differt; *R. Przewalskii*, Maxim. (= *R. kialense*, Franch.) foliis multo minus tomentosis, pedicellis glaberrimis, corolla minore discrepat; *R. Beesianum*, Diels colore corollae saturate roseo, ovario dense ferrugineo-tomentoso satis recedit.

Frutex 6-10 m. altus, ramulis crassis, hornotinis tomento sparso furfuraceo praeditis. Folia 8-11 cm. longa, 3.5-4 cm. lata, elliptica vel oblanceolata, apice breviter acutata atque apiculata, basi late cuneata, margine plana, coriacea, supra

atroviridia rugosula, subtus tomento denso ferrugineo-fulvo deterrenti omnino vestita; costa media supra impressa, subtus elevata, aequae cum lamina tomentosa; nervi secundarii 10-15 utrinque, supra paululo impressi, intra marginem arcuato-anastomosantes, infra obscuri; petioli 2-2.5 cm. longi tomentello furfuraceo tenuissimo praediti. Flores 9-15 umbellato-racemosi; pedicelli circ. 2 cm. longi, densius tomentelli, bracteis paucis linearibus deciduis praediti. Calyx minimus, circ. 1 mm. longus, cupularis glaber 5-lobus. Corolla alba, maculis lineisque saturate kermesinis notata, circ. 3.5 cm. longa, circ. 4 cm. ore (in sicco) lata, e basi late tubulari infundibuliformi-campanulata, 5-loba, tubo circ. 2 cm. longo, lobis subrotundatis circ. 1.5 cm. longis circ. 2 cm. latis emarginatis. Stamina 10-12, inaequalia, longiora circ. 2 cm. longa, filamentis stramineis, quadrante vel triente inferiore dilatata et albo-pilosula, cetera glabra, antheris ochraceis circ. 1.5 mm. longis. Ovarium subcylindricum circ. 5 mm. longum, minute sparse albo-pilosulum; stylus subrectus, circ. 3 cm. longus, glaber, stigmate lobulato-capitato atropurpureo. Fructus deest.

"Shrub or tree of 20-30 ft. Flowers white with deep crimson markings. In rhododendron forest on the western flank of the Lichiang Range. Lat. 27° 30' N. Alt. 11,000-12,000 ft. June 1910." G. Forrest. No. 5870.

Rhododendron Wardii, W. W. Sm. Sp. nov.

Species valde affinis *R. Souliei*, Franch.; foliis petiolis calycis formā persimilis, calyce evolutiore, corolla majore carnosula laete flava nec purpurascenti nec rosea satis discrepat.

Frutex 5-7 m. altus; ramuli crassiusculi initio sparse glandulosi mox glabri, vetustiores cinerei decorticantes. Folia petiolo 2-3.5 cm. longo supra canaliculato primo puberulo mox glabro praedita; lamina 5-11 cm. longa, 2-6 cm. lata, elliptica vel oblonga, apice rotundata vel subrotundata indurato-apiculata, basi rotundata cordatula, coriacea, utrinque glabra, supra atroviridis rugosula infra pallidior nonnunquam olivacea; costa media supra paululo impressa subtus paulo elevata, nervis utrinsecus 10-15, venulis infra pulchre reticulatis. Flores umbellato-racemosi, 7-14; rhachis circiter 1 cm. longa, pedicelli 2.5-4 cm. longi, glandulis nigris subsessilibus densius conspersi. Calyx bene evolutus 6-12 mm. longus, late cupularis membranaceus irregulariter fissus nunc ad medium lobatus nunc fere ad imum partitus flavido-vel rubrido-coloratus; lobi ovati vel orbiculares glandulis nigris breviter pedicellatis crebre cincti, capillis albis hinc inde intermixtis. Corolla 5-loba, late campanulata, circ. 3.5-4 cm. longa, carnosula glabra laete flava,

basi intus levissime kermesino-tincta, lobis orbicularibus 2.5-3 cm. diametro emarginatis. Stamina 10, inclusa, filamentis circ. 1.5 cm. longis glabris antheris 2.5 mm. longis brunneis. Ovarium conicum circ. 5 mm. longum glandulis nigris subsessilibus dense vestitum; stylus 2.5 cm. longus glandulis eisdem conspersus stigmatate capitato lobatulo. Fructus maturus deest.

"China: Western Yunnan, at Doker La on the frontier of Tibet, in shrub and forest belt at 13,000-14,000 ft. Flowers large yellow." F. Kingdon Ward. No. 529.

"Western Yunnan, near A-tun-tsi, 12,000-13,000 ft." F. Kingdon Ward. No. 586.

"Shrub of 14-20 ft. Flowers slightly fleshy bright yellow with the faintest touch of crimson on interior at base. In rhododendron thickets in the mountains on the N.E. of the Yangtze bend. Lat. 27° 45' N. Alt. 12,000 ft. July 1913." G. Forrest. No. 10,428.

This new species is very closely allied to *R. Souliei*, Franch., a widespread species extending from Szechwan to Yunnan. It is at once distinguished by the somewhat fleshy bright yellow flowers which are rather larger than those of *R. Souliei*. In structure and shape of leaf, in the glands on the pedicels and on the calyx, in the shape of the calyx, in the form and appearance of stamens and style, the two species are very much alike. In addition to the colour of the flower, *R. Wardii* is separated by the more elongate leaves which are never orbicular, and in the larger flowers with longer calyx.

Saussurea bullata, W. W. Sm. Sp. nov.

Haec species forma specieiue foliorum ad *S. vestitam*, Franch. spectat sed habitu nano, inflorescentia foliis multo brevior inter alia recedit.

Planta 5-8 cm. alta, rhizomate longo perennans. Caulis brevis densius fulvo-pilosus. Folia 4-6, omnia radicalia vel subradicalia, 4-7 cm. longa, 3-5 cm. lata, ovata vel obovata vel suborbicularia, apice rotundata, basi late cuneata vel breviter cordatula, margine dentibus apiculatis remotius dentata, supra viridia bullata glabra, infra dense albo-pannosa, nervis conspicuis fulvo-tomentosis bene reticulatis. Inflorescentia corymboso-congesta; pedunculi capitulis breviores 5-10 mm. longi. Capitula 2-5, campanulata, 2 cm. longa vel paulo ultro, apice in sicco circ. 1 cm. lata; involucri phylla arcte adpressa, lanceolata, acuta vel subacuta, coriacea, 5-seriata, inferiora extus glabra, superiora ad apices sparse longiuscule albo-pilosa. Flores multi saturate coeruleo-purpurei circ. 1.5 cm. longi;

pappus albidus 1 cm. longus, pilis interioribus longe plumosis, exterioribus deficientibus. Achaenia (immatura) circ. 2 mm. longa, oblonga, glabra, rugosula, annulo membranaceo undulato coronata.

"Plant of 2-3 inches. Flowers deep bluish-purple. Stony alpine pasture on the eastern flank of the Lichiang Range. (Rare!) Lat. 27° 35' N. Alt. 13,000 ft. September 1910." G. Forrest. No. 6653.

Sonerila yunnanensis, J. F. Jeffrey. Sp. nov.

Species ex affinitate *S. maculatae*, Roxb. et *S. lactae*, Stapf; ab hac ex descriptione foliis ciliatis, petalis longioribus differt, ab illa indumento longiore et densiore, foliis haud maculatis recedit.

Herba semierecta 4-10 cm. alta. Caulis teres dense longiuscule glanduloso-pubescent (praesertim in parte inferiore). Folia late ovata ad suborbicularia, subacuta, symmetrica vel paulo asymmetrica, basi nonnunquam cordata, 2-8 cm. longa, 1.5-4 cm. lata, membranacea, haud maculata, saepe pagina inferiore purpurascens, supra glanduloso-setulosa, infra \pm dense glanduloso-pilosa praesertim ad costam nervosque, margine minute denticulata denticulis ciliatis; nervi 3-5-paria, supra indistincti infra eminentes; petiolus 1.5-3.5 cm. longus indumento denso flocculoso praeditus. Cyma terminalis contracta, 3-10-flora; pedunculus 2-4 cm. longus \pm glanduloso-ciliatus, pedicellis ad 4 cm. longis. Calyx oblongo-cylindricus 6 mm. longus, setulis patentibus glandulosis conspersus, dentibus brevibus acutis. Petala 1 cm. longa, lanceolata, acuminata, in sicco purpurea. Antherae sulphureae, rostrato-acuminatae, 5 mm. longae. Stylus 1 cm. longus, stigmate subcapitato. Capsula 8 mm. longa, oblonga, obscure sulcata, pedicello paulo longior, seminibus ovoideis minute punctulatis.

"Yunnan: Szemao, forest ravines, 4500 ft. Flowers pink." Henry 12,337.

Neighbourhood of Tengyueh, Howell 123.

Strobilanthes Dielsiana, W. W. Sm. Sp. nov.

Species ex affinitate *S. versicoloris*, Diels; foliis coriaceis scabridis, staminibus perfectis duobus conspicua.

Planta 15-30 cm. alta. Caules e basi lignosa numerosi, 4-12, erecti, sparse foliati, scabriduli. Folia remota, sub regione inflorescentiae 1-2 paria, 2-5 cm. longa, 1.5-2 cm. lata, plus minusve late ovata, apice obtusa, basi rotundata vel late cuneata, coriacea, supra dense pustuloso-scabrida, costa pilosula, infra dense fulvo-araneoso-tomentosa, nervis 5-6-paribus eminen-

tibus tomentosis ; margines scabridae ; petioli ad 3 mm. longi, pilosi. Flores magni subcapitati, in spiculam brevem densam terminalem conferti et ex axillis foliorum superiorum 2-3-nati brevissime pedunculati orientes. Bracteae ad 1.5 cm. longae, lanceolatae, acuminatae, foliaceae, scabridae, albo-ciliatae ; bracteolae circ. 1 cm. longae, lineares, scabridulae, albo-ciliatae. Sepala bracteolis subsimilia et aequilonga, lineares vel angustissime lanceolatae, longius albo-ciliatae. Corolla multo exserta, ad 3.5 cm. longa, e basi angusta tubulosa circ. 1.5 cm. longa subito ventricosamplata, ore subaperto nec decurvato, purpureo-coerulea, extus glabra, intus lineis sparse albo-pilosis pererrata. Stamina perfecta duo filamentis glabris. Stylus pilis albis patentibus undique praeditus ; ovarium apice pilosula excepta glabrum. Fructus maturus deest.

" Plant of 6-12 inches. Flowers purplish-blue. Dry stony situations amongst scrub on the eastern flank of the Lichiang Range. Lat. 27° 25' N. Alt. 10,000 ft. August 1910." G. Forrest. No. 6264.

***Styrax langkongensis*, W. W. Sm. Sp. nov.**

Species affinis *S. rugoso*, Kurz ; habitu, foliis, calycis dentibus, corollae magnitudine, filamentis satis differt.

Frutex parvus erectus 0.3-1.2 m. altus fide collectore ; rami subteretes juniores dense stellato-fulvi-tomentosi, serius glabrescentes. Folia alterna, petiolata petiolo 1-3 mm. longo dense tomentoso, obovata vel elliptica, 2-4 cm. longa, 1-2 cm. lata, apice breviter acuminata vel obtusa vel etiam subrotundata, basi rotundata vel late cuneata, subcoriacea, in parte superiore minute serrata, interdum subintegra, supra atroviridia minute albido-stellato-tomentella, subtus tomento denso griseo vestita, supra nervis immersis, subtus prominentibus 4-5-paribus fulvo-tomentosis. Inflorescentia racemosa, ad medium plerumque foliata, circ. 4 cm. longa, axillaris vel terminalis, 4-5-flora ; bracteae 4-8 mm. longae, lineares, tomentosae ; rhachis dense fulvo-stellato-tomentosa. Flores albidii, 1.5-2 cm. longi, pedicello 3-4 mm. longo, dense stellato-tomentoso. Calyx cupuliformis, 5-6 mm. altus, in sicco 5 mm. latus, margine truncatus, 5-denticulatus, dentibus 1-1.5 mm. longis irregularibus, linearibus vel anguste triangularibus, extus densissime fulvo-tomentosus, intus ore sparse pilosulus cetera glaber. Corolla 5-partita, tubo 3 mm. longo lobis multo brevioribus, lobis in aestivatione imbricatis membranaceis 1.5-1.8 cm. longis 5-6 mm. latis spathulatis extus dense stellato-tomentellis intus parcius. Stamina 10, filamentis parte libera antheras subae-

quantibus per tres partes inferiores pilosis, antheris circ. 5 mm. longis pilis stellatis adpersis. Ovarium superum tomentosum stylo glabro antheris longiore.

"Dwarf shrub of 1-4 ft. Flowers creamy white. Dry open stony pasture in the hills at the south end of the Lang-kong Valley. Lat. 26° 10' N. Alt. 7000-9000 ft. May 1910." G. Forrest. No. 5585.

Tovaria Forrestii, W. W. Sm. Sp. nov.

Species ex affinitate *Tovariae Delavayi*, Franch.

Planta circ. 60 cm. alta. Caulis flexuosus glaberrimus, polyphyllus. Folia ad 17 cm. longa, ad 8 cm. lata, elliptica vel ovato-elliptica, basi amplexicaulia, cordata lobulis imbricatis, petiolo nullo, apice longe acuminata, tenuiter membranacea, utrinque glabra, infra pallidiora. Inflorescentia composita, in specimine viso in racemos tres elongatos tenuis flexuosos 20-30-floros divisa; rhachis furfuroso-pubescent; bractee lineares circ. 2 mm. longae; pedicelli 3-4 mm. longi, furfuroso-pubescentes. Flores flavi fragrant; perianthium 5-6 mm. longum fere ad basin in lobos lanceolatos acutos partitum. Stamina in parte tertia inferiore segmentorum inserta, filamentis brevissimis. Ovarium globosum; stylus columnaris ovarium subaequans, apice obscure trilobus.

"Plant of 2 ft. Flowers dull yellow, shaded maroon, fragrant. Open and shady mixed forests on the eastern flank of the Tali Range. Lat. 25° 40' N. Alt. 9000-10,000 ft. July 1910." G. Forrest. No. 7066.

A species well distinguished by the cordate amplexicaul leaves without petioles, by the deeply cleft perianth, and by the columnar style with shortly 3-lobed apex.

Tovaria lichiangensis, W. W. Sm. Sp. nov.

Species ex affinitate *Tovariae Fargesii*, Franch. et *T. Souliei*, Franch. sed foliis utrinque albo-pilosulis, margine ciliatis inter alia ex descriptione recedit.

Planta 10-15 cm. alta, rhizomate gracili elongato, fibris tomentellis. Caulis gracilis flexuosus infra glaber, supra pilis parvis reflexis albidis plus minusve dense indutus. Folia 3-4, in medio caule approximata, petiolo 5-15 mm. longo semiamplectante praedita; lamina 3-4.5 cm. longa, 2-2.5 cm. lata, ovata vel ovato-elliptica, basi late cuneata, apice breviter atque acute acuminata, utrinque sparsius albo-pilosula, infra saepe glabrescens, margine breviter albo-ciliata. Inflorescentiae rhachis 6-8 cm. longa, simplex, 2-5-flora; bractee parvae,

ovatae, fuscae; pedicelli flore breviores; flores albi fragrant. Perianthium 7-8 mm. longum membranaceum, paulo ultra medium in lobos ovatos obtusos partitum. Stamina ad tubi fauces inserta antheris albidis filamenta paulo complanata fere aequantibus. Ovarium globosum; stylus ovario paulo longior apice breviter trilobus.

"Plant of 3-6 inches. Flowers pure white, fragrant. Shady situations in pine and rhododendron forests on the western flank of the Lichiang Range. Lat. 27° 20' N. Alt. 12,000-13,000 ft. June 1910." G. Forrest. No. 5801.

Trachydium spatuliferum, W. W. Sm. Sp. nov.

Species valde affinis *Trachydio Delavayi*, Franch.; magnitudine habitu foliis proxima, bracteolis diversissima.

Planta 5-20 cm. alta, erecta glabra. Rhizoma crassum. Caulis solitarii vel plures, basi fibris petiolorum pristinorum cincti. Folia plurima ex imo caule orta, petiolo basi conspicue late vaginante circ. 2-4 cm. longo praedita, glaberrima; lamina 3-4 cm. longa, 1-1.5 cm. lata, ambitu oblonga, pinnata; segmenta utrinque 3-4, late ovata vel suborbicularia sessilia circ. 7-8 mm. diametro, apice basique subrotundata, margine paucies serrata vel subintegra. Involucri phylla foliacea, 4-5, foliis persimilia, petiolo vaginante incluso ad 5 cm. longa. Umbellae radii 10-20 inaequales sub anthesi 3-9 cm. longi. Involucelli phylla 4-6, variabilia, 8-12 mm. longa, flores superantia, saepius lineari-spatulata, integra vel 3-5-fida, segmentum supremum semper maximum, lateralia saepius minima linearia. Sepala inconspicua. Petala flavido-viridia ex collectore, subelliptica circ. 1.5 mm. longa, apice inflexo. Ovarium nitentia-troviride viscidum.

"Plant of 2-8 inches. Corolla yellowish-green, gynaeceum dark green, viscid, and shining. Open stony pasture on the eastern flank of the Lichiang Range. Lat. 27° 30' N. Alt. 11,000-12,000 ft. July 1910." G. Forrest. No. 6019.

Vaccinium modestum, W. W. Sm. Sp. nov.

Species haec nana inter species hujus regionis cognitas flore solitario facile recognoscitur.

Fruticulus minimus; pars epigaea 3-8 cm. longa; rhizoma repens gracile. Caulis suberectus basi defoliatus et decorticans, supra laxius foliatus glaber rubridus. Folia pauca (4-8), 2-3 cm. longa, 1-1.6 cm. lata, ovata vel elliptica vel obovata, apice rotundata vel obtusissima raro emarginata, basi rotundata vel late cuneata, tenuiter coriacea, integra, glabra, supra viridia

infra subglaucescentia, nervis utraque facie conspicuis bene reticulatis; petioli brevissimi vel fere nulli. Flores solitarii in axillâ folii supremi orti, rarius duo in eodem ramulo, subcernui, pedicellis usque ad 3 cm. longis glabris rubridis suffulti; bracteolae duae conspicuae sub flore positae circ. 8 mm. longae 5-6 mm. latae, ovatae vel suborbiculares foliaceae virides purpureo-suffusae pulchre reticulatae. Calycis lobi deltoidei 1 mm. longi, 2 mm. lati, rubro-purpurei. Corolla globosa circ. 4 mm. longa, fere ad medium in lobos ovatos apice rotundatos leviter recurvatos fissa, in sicco rubro-purpurea. Stamina 10 filamentis 2 mm. longis glabris, antheris 1.5 mm. longis tubulis 2 mm. longis praeditis, aristis duabus 2 mm. longis subulatis rigidis. Ovarium circ. 4 mm. longum, glabrum. Fructus deest.

China:—Western Yunnan near the Doker La. Alt.? F. Kingdon Ward. No. 1023A in Herb. Edin.

A pretty dwarf species suggesting a single-flowered *Pyrola* in habit.

Dracocephalum Isabellae, G. Forrest. Sp. nov.

Species pulcherrima affinis *D. tangutico*, Maxim. quod foliis approximatis sed floribus multo differt; statura habituque *D. argunense*, Fisch. proximum est sed foliis integris antheris villosis inter alia signa separatur.

Herba perennis caulibus gracilibus simplicibus 30-50 cm. altis apud angulos dense longiuscule albo-crispato-villosis. Folia ad 2.5 cm. longa vix petiolata potius vaginulata fere ad basin in 5-7 segmenta linearia pedatim partita in memoriam ea *D. tangutici*, Maxim. revocantia; segmenta 1.5-2 cm. longa 1-2 mm. lata apice obtusiuscula subcoriacea integra plus minusve revoluta supra atroviridia sparse pilosula infra pallidiora minute nitenti-glanduloso-punctata in costam pilis adpressis hispida; vaginula densiuscule albo-villosa; in axillis superioribus inveniuntur ramuli abbreviati foliosi. Verticillastri 4-6-flori approximati inflorescentiam spiciformem 8-10 cm. longam formantes. Bractee inferiores foliis subsimiles sed minores, superiores 1.5 cm. longae pedatim 3-5-partitae vel lobatae extus atropurpureae plus minusve albo-pilosulae segmentis apice subspinescentibus margine longiuscule albo-ciliatis; bracteolae lanceolatae vel trifido-oblancheolatae bracteis subaequilongae vel paulo minores; pedicelli \pm 5 mm. longi densissime albo-villosi. Calyx 1.5-1.7 cm. longus tubuloso-campanulatus extus dense albo-villosus intus glaber dentibus 4-5 mm. longis triangularibus subspinescentibus longe albo-ciliatis. Corolla 3.5-4 cm. longa saturate caeruleo-purpurea extus capillis pluricellularibus purpureis praesertim in galeam eximie ornata intus glabra; tubus curvatus

infra 2 mm. latus superne gradatim ampliatus ventricosus circ. 1 cm. latus; labium superum oblongo-ellipticum galeatum 8 mm. longum integrum extus pulcherrime purpureo-villosum; labium inferum patens circ. 1.2 cm. longum lobo medio reniformi fere 1 cm. lato margine pulchre erosulo utrinque glabro lobis lateralibus subrotundatis medio minoribus extus villosis. Stamina e tubo exserta labio supero paulo breviora filamentis purpureo-villosis antheris glabris. Nuculae desunt.

"Plant of 12-20 inches. Flowers deep blue-purple. Open stony limey pasture on the mountains of the Chungtien plateau. Lat. 27° 30' N. Alt. 12,000 ft. July 1914." G. Forrest. No. 12,789.

It is to be hoped that this very beautiful species will be introduced to European gardens. The plant is dedicated to Miss Isabella Forrest, the sister of the collector.

***Pertya monocephala*, W. W. Sm. Sp. nov.**

Species valde affinis *P. phyllicoidi*, J. F. Jeffrey a qua capitulis solitariis terminalibus longe pedunculatis majoribus inter alia distinguitur; *P. Bodinieri*, Vaniot ex descriptione inflorescentiâ amplâ capitulis unifloris maxime recedit.

Fruticulus 30-60 cm. altus. Ramuli rigidi virgati plus minusve scabridi. Folia circ. 5 mm. longa, 3-5-fasciculata, ita revoluta ut linearia videantur, apice spinescentia, supra subglabra vel sparsius araneoso-villosa, infra dense albo-sericea, pulvinis sericeis inserta. Capitula solitaria, ramulos terminantes, usque ad 2 cm. pedunculata, circ. 2.5 cm. longa, medio circ. 1.5 cm. lata, 7-10-flora. Involucri phylla pluriseriata lanceolata, longiuscule acuminata apiculata, membranacea, pallido-viridia, exteriora 5-10 mm. longa, margine albidoscariosa atque fulvido-araneoso-villosula, interiora usque ad 2 cm. longa, subglabra. Corolla fere 2 cm. longa, alte 5-fida, segmentis linearibus circ. 5 mm. longis. Antherae bási longe caudatae. Achaenia circ. 4 mm. longa, oblonga, densissime albo-sericea. Pappi setae simplices rigidiusculae scabridae albidae 1.5 cm. longae vel ultro.

"China:—Jalung, Oui-chu Valley, Western Yunnan; at an elevation of 9000-10,000 ft. Shrub of 1-2 ft. January 1914." F. Kingdon Ward. No. 1141. (Also found, according to Mr. Ward, in the arid region of the Salween and Mekong Valleys.)

The present species shows a close affinity in foliage to *Pertya phyllicoides*, J. F. Jeffrey, of the same region but differs much in the inflorescence.